American Anthropologist

NEW SERIES

VOL. 17 APRIL–JUNE, 1915 NO. 2

EXOGAMY AND THE CLASSIFICATORY SYSTEMS OF RELATIONSHIP[1]

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SOME connection between exogamy and primitive relationship terminologies has been recognized for a long time. Morgan noted that among the Iroquois all clan members were brothers and sisters as if children of the same mother.[2] And though in his theoretical treatment of the subject he does not derive the classificatory system as a whole from the exogamous principle, he does attribute the change from the older Malayan to the later and more common Turanian form of the system to punaluan marriage as a predecessor of the institution of exogamy and to exogamy itself.[3] Tylor, to my knowledge, was the first to view exogamy and the classificatory system as but "two sides of one institution."[4] More recently both Frazer[5] and Rivers[6] discovered the origin of the classificatory system in "a social structure which has the exogamous social group as its essential unit," both conceiving this group as

[1] Read before the American Anthropological Association at Philadelphia.

[2] *League of the Ho-dê-no-sau-nee or Iroquois*, Book 1, chapter 4.

[3] *Ancient Society*, Book 3, chapters 1–3.

[4] "On a Method of Investigating the Development of Institutions, Applied to Laws of Marriage and Descent," *Journal Anthropological Institute*, XVIII (1889), pp. 245–269, especially, p. 261 et seq.

[5] *Totemism and Exogamy*, IV, p. 114.

[6] "On the Origin of the Classificatory System of Relationships" in *Anthropological Essays presented to Edward Burnett Tylor*, pp. 309–323; *Kinship and Social Organisation*, p. 70 et seq. The latter is an astonishingly stimulating contribution to the whole subject of kinship nomenclature.

an exogamous moiety, which indeed had already figured prominently in Tylor's essay.

It will be best to put this theory in somewhat more concrete form. Among the Iroquois, Morgan noted that a single term was applied to the maternal grandmother and her sisters; to the mother and her sisters; to the father and his brothers; and so forth. On the other hand, distinct terms were applied to the father's and to the mother's brother, to the father's and to the mother's sister.[1] All these facts are readily formulated by deriving the classification from the exogamous groups extant among the Iroquois: those relatives distinguished in our own nomenclature and not distinguished in that of the Iroquois are members of the same exogamous division, while those not distinguished by us and separated by the Iroquois are necessarily members of different divisions. From this point of view the objection otherwise plausibly urged against denying the name "classificatory" to our own system since it, also, ranges certain relatives in *classes*, becomes impossible. It is no longer a question, whether our terms "uncle," "aunt," or "cousin" are "classificatory" in a purely etymological sense of the term; nor whether the classificatory principle is quantitatively more important in certain primitive systems than in our own.[2] The point at issue is the *basis* of the classification, and having regard to this there obviously exists a real difference between a system that classifies, say, cousins from both the father's and the mother's side under a common term and a system that rigorously divides relatives of the paternal and the maternal line on the ground of their different clan or gentile affiliations. Thus, the Tylor-Rivers theory, on the one hand, briefly summarizes and makes intelligible certain modes of classification operative in many primitive systems that otherwise might seem purely capricious; and, moreover, it furnishes at last a logical basis for separating our civilized system from that of the primitive peoples concerned.

I am profoundly impressed with the influence of the exogamous principle on primitive kinship nomenclature, but I feel strongly that the principle has not yet been formulated with adequate pre-

[1] *League*, l. c.

[2] Rivers, *Kinship and Social Organisation*, p. 2.

cision and due regard to coordinate principles of a different type. It seems to me that most writers on the subject suffer from the familiar disease of conceptual realism: the concept "classificatory system" is for them a sort of Platonic idea in the essence of which particular systems of this type somehow participate.

Even Dr Rivers cannot be freed from this charge. In practice he does not treat classificatory systems as fully determined by the clan or gentile factor, but smuggles in additional elements that go hand in hand with exogamy in moulding relationship nomenclature. Most important among these is the principle, so strongly emphasized by Cunow, that members of the same generation are classed together and apart from other generations. Dr Rivers regards this as so general a feature of "classificatory" systems that departures from the rule at once elicit from him special hypotheses.[1] Again, in a concrete illustration of his theory, he has it that in tribes possessing a classificatory system a person will apply a single term to all the members of his father's clan *of the same generation as his father*. I am certainly in favor of considering clan, generation, and other causes as jointly operative in the development of kinship nomenclature, but if this method is accepted an attempt must be made to indicate the interaction of these several principles. The fact is that the mode of interaction for the two factors that are here taken into account *varies*. In some cases, Dr Rivers's statement, that members of the same clan (or gens) *and* generation are united, holds. But in other cases, for example among the Tewa, Crow, Hidatsa, and Tlingit, the exogamous principle predominates and overrides the generation category. Here, then, is an empirical problem, to be settled for every people and only obscured by the characterization of classificatory systems generally as "clan" systems; to wit, the problem how the exogamous group is coordinated with other principles of classification.

The fact that Dr Rivers has not attempted to evaluate the several factors that together determine primitive relationship terminology has led him into the curious position of underestimating in practice the very factor that occupies the dominant position

[1] Ibid., pp. 29–31.

in his theory. Again and again he invokes special social usages to account for "relatively small variations of the classificatory system" that are at once explained by the prepotency of the exogamous principle. For example, he cites the East Indian term *bahu*, which is applied to the son's wife, the wife, and the mother; and in explanation of this classification he assumes a one-time form of polyandry in which a man and his son had a wife in common.[1] This assumption is *de trop* because with a dual organization and paternal descent, I and my son belong to my father's moiety, while my mother, my wife, and my son's wife must belong to the complementary moiety; hence, *bahu* may simply connote females of that exogamous group. Again, Dr Rivers cites the Pawnee use of one term for the wife and the wife of the mother's brother, explaining this by a special form of marriage.[2] But, given a dual organization with maternal descent, I and my mother's brother are members of the same moiety, while my wife and his wife are fellow-members of the complementary moiety. Finally, the confusion of generations in the Banks Islands[3] requires no special hypothesis. With maternal descent, my father's sister's son is classed with my father because, as among the Tewa of Hano, he is my father's clansman. My mother's brother's children are classed with my children because my mother's brother, being my clansman, is my brother; and because two brothers regard each other's children as their own. Thus, in the first confusion of generations the clan principle alone has been operative; in the second case, the clan principle has established a relationship from which a really non-existent distinction of generation is the logical derivative.

Thus, on the one hand, the exogamous theory does not suffice to explain the "classificatory" systems in their totality; on the other hand, it eliminates certain auxiliary hypotheses considered necessary by the most eminent of its advocates. Obviously, there is something wrong with the formulation of the theory.

The solution of the difficulty lies implicitly in the original and

[1] Ibid., p. 90.
[2] Ibid., pp. 53–54.
[3] Ibid., p. 28 et seq.

invaluable portion of Professor Kroeber's essay on the subject[1]—the very part ignored or misunderstood by his critics—where he lists the categories in which the North American Indians have ranged relatives, and by the quantitative importance of each of which a given system may be defined. Among these categories is that of distinguishing lineal and collateral relatives,—the father from the father's brother, the mother from the mother's sister, the brother from the cousin. When we turn to Morgan's earliest description of what he afterwards took for the starting-point of his definition of the classificatory type of system,[2] we find that what impressed him above all was the abeyance of the rule that collateral shall be distinguished from lineal relatives. This, then, forms the core of Morgan's concept, however obscured by adherent features that are logically quite unrelated. And from this point of view the Tylor-Rivers theory assumes a different aspect. Exogamy cannot explain why generations are so generally distinguished; it cannot explain the frequent differences between elder and younger *Geschwister*, or the frequent distinction between vocative and non-vocative forms; it cannot explain a hundred and one features of classificatory systems so-called. But it does explain why lineal and collateral lines of kinship are merged in the particular way characteristic of the Iroquois, Ojibwa, and many other primitive systems conforming to Morgan's Turanian type. Thus purged, the theory must now be subjected to empirical verification.

It might appear at first sight that such an empirical verification has already been given by Dr Rivers with regard to Oceania, though this, of course, would not render it unnecessary to collect corroborative evidence from other regions. However, Dr Rivers has in reality made a different point. In Oceania he is not dealing with classificatory and non-classificatory systems, but merely with the two forms of the classificatory system,—the Hawaiian and the Turanian. In both forms lineal and collateral relationship are merged, but in the Hawaiian nomenclature the terms are even more inclusive, no distinction being drawn between relatives of the

[1] "Classificatory Systems of Relationship," *Journal Royal Anthropol. Inst.*, 1909, XXXIX, p. 77 et seq.

[2] *League*, Book I, chapter 4.

maternal and the paternal side. Setting out with his theory and these two forms of the classificatory system before him, Dr Rivers undertakes to show how the Hawaiian form could have developed from the Turanian form which alone follows logically from the exogamous principle. He finds that where the Hawaiian form is most clearly developed, traces of exogamy are lacking, while the highest development of exogamy is accompanied by a Turanian form of kinship system. An indefinite number of intermediate social organizations are accompanied, we are told, by intermediate kinship terminologies. The general interpretation of the phenomena offered is that a progressive change has occurred from the Turanian to the Hawaiian form, going hand in hand with the substitution of non-exogamous marriage regulations for regulation by exogamous divisions.[1]

This is obviously not testing the theory that the classificatory system is a function of exogamy, but merely interpreting by a special historical hypothesis the occurrence of an aberrant type of classificatory system, on the supposition that the theory is already established. Granting that the hypothesis correctly represents the course of development in Oceania, we cannot assume that exogamy everywhere represents an older condition, and indeed in North America the evidence points in the opposite direction.[2] Without assuming the priority of either the exogamous or the loose social organization, we can test the Tylor-Rivers theory by grouping together exogamous tribes, on the one hand, and non-exogamous tribes, on the other hand, and comparing the corresponding kinship terminologies. North America, where the geographical distribution of types of organization is fairly well determined, offers a favorable field for such an inquiry.

In the first place, there can be little doubt that the custom of identifying in nomenclature lineal and collateral relatives is very largely coextensive with the exogamous practice. It is found in at least three of the four main exogamous areas of the continent,—east of the Mississippi, among the southern Siouan and northwestern

[1] *Kinship and Social Organisation*, p. 65 et seq.

[2] See the present writer's "Social Organization," *American Journal of Sociology*, 1914, pp. 68–97.

Plains tribes, and on the Northwest coast. For the Southwest satisfactory data seem to be lacking except for the Tewa,[1] where conditions are markedly anomalous. Both among the patrilineally organized Tewa of New Mexico and the matrilineal Tewa of Hano, Arizona, there are distinct terms for father's brother and father, although the term for "father" is "applied loosely to father, elder brother, father's brother, or other relatives older than self" in New Mexico,[2] and at Hano to all father's clansmen, including of course his own brothers.[3] For the present purpose it is important to note that at Hano it is the distinct term for "father's brother" that seems to be the older mode of designation, now rendered obsolescent by the term for "father."[4] Similarly, in both branches of the Tewa, the mother's sister is carefully distinguished from the mother; in Hano, we are told emphatically, a mother's sister is never addressed as mother; and conversely we find that a woman does not address her sister's children like her own children but by a reciprocal term with diminutive suffix.[5] In New Mexico there is a further invasion of the exogamous principle inasmuch as no distinction is drawn between paternal and maternal uncles and aunts respectively.[6]

For the Tewa, then, the hypothetical correlation does not hold. In the New Mexican division of the people the grouping of relatives has been affected only to a very slight degree by the gentile organization. At Hano the effect of the corresponding clan organization has been greater, for among other extensions, the word for "child" is applied by a male to any of his clansmen's children and a single term embraces all the speaker's clansmen other than his own brothers. Nevertheless, even in this pueblo the divergence from the type in the designations for father, mother, and child is so great that we cannot, without doing violence to the facts, describe

[1] Harrington, "Tewa Relationship Terms," *American Anthropologist*, 1912, XIV, pp. 472–498; Freire-Marreco, "Tewa Kinship Terms from the Pueblo of Hano, Arizona," ibid., 1914, XVI, pp. 269–287.

[2] Harrington, l. c., p. 479.

[3] Freire-Marreco, l. c., p. 277.

[4] Ibid., p. 278.

[5] Ibid., p. 276; Harrington, 488.

[6] Harrington, pp. 487, 488.

the kinship system as a "clan" system. In short, here is a striking instance of exogamy without an exogamous alignment of kindred.[1]

A thoroughgoing explanation of the Tewa anomaly will be possible only when other southwestern systems shall have become known. For the present a few hints must suffice. So far as the Hano people are concerned, it will be well to remember that their present rule of descent, as well as parts of their kinship terminology, may be due to the influence of the surrounding Hopi and their isolation from the other Tewa pueblos. Not the inhabitants of the single village of the Tewa enclave in Hopi territory, as Miss Freire-Marreco seems to suppose, but their New Mexican congeners may use a kinship system approaching the ancient Tewan type. The problem thus narrows down to that of explaining why the patrilineal Tewa use a nomenclature that does not reflect their gentile grouping. Two alternative solutions occur to me. Either the Tewa adopted their present social organization at so recent a period that the innovation has not yet affected their mode of designating relatives. Or they have abandoned an older kinship system and borrowed a new one from some non-exogamous tribe. A third possibility, however distasteful to some minds, must be reckoned with. Though the influence of a clan or gentile organization on kinship terminology seems to be a very general phenomenon, it cannot be accepted as a law of nature. It remains conceivable that a tribe should possess an exogamous social organization that finds little or no expression in the linguistic designation of kindred, just as it is now an established fact that the linguistic grouping of different relatives under the same category does not blind the users of such a terminology to the differences in the relationships.

However this may be, the single exception that has been noted cannot invalidate the empirical rule that there is a considerable correlation between exogamy and the merging of lineal and collateral relatives. Our next question is, what happens to kinship nomenclature among non-exogamous tribes? The most important

[1] This is confirmed by Morgan's statement that in Tesuque, the southernmost Tewa pueblo, all cousins alike were addressed as brothers and sisters. *Systems of Consanguinity and Affinity*, p. 263.

North American tribes without a clan or gentile organization are the Eskimo, the Mackenzie river, Plateau, and California Indians. Let us rapidly survey representative kinship terminologies of these tribes.

The Eskimo system differs so radically from the characteristic "classificatory" form that even Morgan claimed at best only a remote relationship between the two. The father's brother is distinguished from the father, the mother's sister from the mother, the children of my father's sister and of my mother's sister are designated by a common term, and so forth.[1] For the Mackenzie river district Morgan's informants seem to establish the presence of fairly well-defined exogamous kinship features among these non-exogamous peoples; however, in contravention of such a system cousins are uniformly addressed as brothers and sisters.[2] Moreover, the exogamous features may be the result of borrowing from two distinct sources,—the Algonkian tribes to the south, and the Pacific coast population to the west. The striking coincidence of certain Northern Athapascan with Algonkian traits is noted by Morgan himself. Passing to the Salish tribes of the interior of British Columbia, we find a marked departure from the exogamous type of nomenclature. The Coast Salish draw no distinction between cousins on the father's and the mother's side; class together paternal and maternal uncles and aunts, distinguishing them from the parents; and distinguish children from all nephews and nieces. The Bella Coola likewise distinguish uncles and aunts from parents, and class together those of the paternal and those of the maternal line. Among the Shuswap there seem at first sight to be some "classificatory" features inasmuch as nephews are classed with sons, and nieces with daughters; but they are classificatory only in an etymological, not in Dr Rivers's sense of the word, since the brother's and the sister's children are included in the same category. Boas points out that, while the Shuswap distinguish the parents from their brothers and sisters, the term used by boys for uncles

[1] Morgan, *Systems*, pp. 276–277.

[2] Ibid., pp. 234–340. In Chipewyan, according to Legoff (*Grammaire de la langue montagnaise*, p. 330) a distinction as to father's and mother's side is made when the speaker addresses a cousin of the opposite sex.

coincides with the stem for "father" in other dialects, while that used by girls for aunts approximates the stem for "mother" in other branches of the Salish stock. This fact is of the utmost significance for a study of kinship terminology from a psychologico-linguistic point of view, but has no bearing on the present issue since, even in these instances, the uncles and aunts are not distinguished as to paternal or maternal side. Among the Okanagan this difference is indeed made, but the terms for parents remain distinct. In Kalispel Salish, likewise, the mother's sister is not confounded with the mother in nomenclature, nor the father's brother with the father; the terms applied by a female to her nephews and nieces are obviously related to those for "son" and "daughter," but again the brother's and sister's children are not distinguished. In short, the non-exogamous Salish tribes have a non-exogamous kinship system.[1] For California published data are meager, but Kroeber's statement that the systems of that area display a remarkable differentiation between the lineal and collateral lines supports the assumption of their non-exogamous character.[2] Finally, we may consider the Shoshonean family for which partial lists by Sapir are available for the Kaibab Paiute and Uintah Ute,[3] as well as unpublished data collected by the present writer among the Wind River Shoshone, White River (?) Ute, Southern Ute, and Northern Paiute, not to forget Morgan's imperfect presentation of the Uncompahgre system. With the single exception of the Wind River Shoshone, the kinship nomenclature of the entire stock is markedly non-exogamous: parents are distinguished from uncles and aunts, children from all nephews and nieces. Among the Kaibab maternal and paternal uncles or aunts are not distinguished, and even among the Wind River Shoshone all cousins are designated by a single term. On the other hand, all the Shoshonean systems are characterized by a feature shared with

[1] Boas, "Terms of Relationship of the Salish Languages," *Report of the Sixtieth Meeting of the British Association for the Advancement of Science*, 1890 (London, 1891), pp. 688–692.

[2] Kroeber, l. c.

[3] "A Note on Reciprocal Terms of Relationship," *American Anthropologist*, 1913, p. 135 f.

the Tewa,—the frequent use of reciprocal instead of correlative terms for the members of a related pair. We may well pause for a moment to consider the influence of historical accident on the course of theoretical speculation. It has been said by an eminent scientist that if physicists had first studied thermal rather than mechanical phenomena, heat would not have been described as a mode of motion but motion as a mode of heat. Had Morgan begun his researches in the Plateau area, we might have heard less of classificatory and more of reciprocal systems of relationship.

Summing up the result of our sketchy survey, we may say that the Tylor-Rivers theory derives strong corroboration from North American data. Despite some conflicting evidence exogamous kinship systems coincide so largely with an exogamous social organization and are so commonly lacking where exogamy does not obtain that a functional relation between the two must be regarded as more than probable.

We are thus emboldened to pursue our inquiry somewhat more rigorously. Having compared exogamous tribes as a whole with non-exogamous tribes as a whole, we may profitably undertake a more intensive comparison of narrower scope. Since a multiplicity of operative causes must be recognized, it becomes necessary to minimize all other differences save in point of exogamy for the purpose of studying the effect of that factor by itself. This may be done by grouping tribes according to various principles of classification. Within the Algonkian stock, for example, the Cree are reported to lack an exogamous organization. How, then, does the Cree kinship system compare with that of the linguistically and culturally most closely related Algonkian tribes possessing the gentile organization, such as the Ojibwa? From Morgan's data it appears that the kinship terminologies of these tribes agree very closely, both indicating the influence of the exogamous factor.[1] Does, then, the Tylor-Rivers theory break down? Not at all. It must simply be taken in connection with certain concrete facts. That kinship nomenclature may persist after the conditions in which it originated have disappeared, is a principle never urged

[1] *Systems*, pp. 204–208.

more emphatically than by Morgan himself. The Cree terminology may therefore well be a survival from a former gentile organization, which is in this instance rather probable from its prevalence in a number of closely allied Algonkian peoples. Again, within the same stock, the Arapaho and the Gros Ventre, sharing the essential traits of Plains culture and speaking mutually intelligible dialects, differ in point of organization; the Arapaho having a non-exogamous and the Gros Ventre a gentile system. If the Arapaho and Gros Ventre kinship systems differed accordingly, the history of the difference might be sought in the influence of the Blackfoót with whom the Gros Ventre have been in intimate contact and from whom they have demonstrably borrowed a number of cultural traits. The Arapaho and Gros Ventre systems, however, are identical, and, except for the designation of cousins, conform to the exogamous type. Shall we be inclined, as in the previous instance, to assume a former condition of Arapaho exogamy?

This raises an important problem. Tylor was so strongly impressed with the correlation of "classificatory" systems and exogamy that he felt warranted in inferring exogamy from the presence of such a system. Nowadays, we shall hardly go quite so far. Granting that a correlation is established, it would still have to be proved that it is a hundred per cent. correlation, that not only do exogamous peoples possess a corresponding kinship system but that no other cause could have produced such a system. The geographical distribution of certain relationship categories demonstrates that these categories, like other cultural traits, may be diffused by borrowing. In the paper already quoted Dr Sapir points out that in the southwestern United States the use of reciprocal terms with diminutive suffixes to designate the junior relative is strangely similar among the Tewa and the Shoshonean tribes. The distribution of reciprocal systems is so definitely localized in North America, without being confined to members of a single linguistic family, as to become intelligible only on the hypothesis of borrowing. This being so, the confusion in language of lineal and collateral relatives may likewise have spread through historical connection,

[1] Kroeber, *The Arapaho*, pp. 9 f., 150.

as has already been suggested for the Athapascan of the Mackenzie River region. We shall therefore certainly be on the alert for evidence of former exogamy where the kinship system is exogamous, but we shall not accept the system as proof of exogamy unless, as in the Cree instance, there are specific conditions to corroborate the conclusion. In the Arapaho case the conditions are not, in my opinion, of such a character. Here we have not a group of closely related tribes all of whom, with a single exception, possess an exogamous organization. The Arapaho and the Gros Ventre stand alone within the Algonkian family, and as already stated the Gros Ventre may have borrowed the gentile organization from the Blackfoot. Under the circumstances I do not pretend to give a solution of the problem but content myself with enumerating various possibilities. It may be, as Tylor would argue, that the Arapaho-Gros Ventre originally had an exogamous organization still preserved by the Gros Ventre, of which the Arapaho kinship system is a survival. Or, the as yet undivided parent tribe lacked exogamy, but borrowed an exogamous terminology from some neighboring people. Or, the parent tribe had neither exogamous divisions nor an exogamous nomenclature, but the Gros Ventre adopted them from the Blackfoot; and the Arapaho, in recent times, borrowed the Gros Ventre terminology. Or, the common terminology developed quite independently of exogamy,—to my mind the least acceptable hypothesis.

The two illustrations hitherto given of intensive comparison have been made on the basis, primarily, of linguistic affiliation. Important as such a classification must be when we are dealing, after all, with elements of speech, it is not always possible. This applies, for example, to California, where the degree of linguistic differentiation necessitates a different mode of grouping. Here we might ask, for instance, how the exogamous Miwok differ as regards kinship from their non-exogamous neighbors, such as the Maidu, Washo, or Yokuts. Similarly, in the Plains area, the system of the non-exogamous Kiowa would be of great interest for our present purpose. Again, the Pawnee seem to have an exogamous kinship system without exogamy. This *may* be a survival from one-time exogamy; but it may also be the result of borrowing, and a detailed

comparison of the Pawnee system with that of all the tribes with which the Pawnee have come in contact may determine its source of origin.

Only through such intensive studies of detail shall we obtain an insight into the workings of the exogamous principle in its effect on kinship terminology and in its relations to other principles that may check or nullify its influence.

As has already been suggested, exogamy may do more than produce the fusion of lineal and collateral lines; as among the Hano Tewa, Crow, and other tribes, it may override the generation principle. This possibility is admitted by Dr Rivers, who is, however, strongly inclined to explain the disregard of generations not by exogamy but by the practice of special forms of marriage. The special case of the father's sister's son being classed with the father is intelligible, we are told, if a man marries the wife or widow of his mother's brother, for thus he comes to occupy his maternal uncle's social status, and his uncle's children therefore regard him as their father.[1] This assumption has already been criticised from the point of view of logical method: on the principle that hypothetical causes shall not be multiplied unnecessarily I have argued that no special hypothesis should be advanced for minor variations of the classificatory system if the theory purporting to explain that system as a whole suffices to explain the variations. This argument does not of course refute the existence of special causes. How, then, can we be sure that it is the exogamous factor and not some such social usage as that suggested by Dr Rivers that determines the classification under discussion? In the first place, it should be noted that the neglect of generations among the Tewa, Hidatsa, and Crow is not limited to the person of the father's sister's child, but that a single term is applied to the father's sister and all her female descendants, immediate and through females, *ad infinitum*. Shall we construct successive hypotheses as to forms of marriage by which a man would become the son of his father's sister's daughter's daughter and her successive female descendants when all the facts are summed up by the plain statement that there is one word for a

[1] *Kinship and Social Organisation*, pp. 54, 28–31.

father's clanswoman? That the clan is indeed the determining factor, is indicated by the effect of eliminating it. Among the Crow, as soon as we pass out of the clan by taking the daughter of the father's sister's *son* rather than of the father's sister's daughter, the generation factor at once enters: my father's sister's son is indeed my father since he belongs to my father's clan, but his daughter belongs to her mother's clan, hence is related to me only genealogically as my "father's" daughter, hence is my *sister*, not my mother or aunt.[1]

The conclusion is corroborated by other evidence. If the rule of descent is changed from maternal to paternal, kinship nomenclature should not be affected provided it has been shaped by forms of marriage, which are substantially uniform throughout the Plains area. If, on the other hand, kinship nomenclature has been shaped by exogamy the change from matrilineal to patrilineal descent[2] must produce a change in the terminology since my father's sister's daughter no longer belongs to my father's exogamous division. Within the Siouan family, to which the matrilineal Crow and Hidatsa belong, there are also patrilineal tribes, of which the Omaha are the best known. Among the Omaha my father's sister's daughters are classed not with my father's sister but with my sister's children, while her husband is my brother-in-law. These facts seem to indicate the influence of the gentile factor, for my father's sister belongs to my gens and is therefore my gentile sister, although it must be noted that the Omaha distinguish the father's sister from the own sister. The Crow and Hidatsa with greater consistency class not only the mother's brother's children with the brother's children —which corresponds exactly to the Omaha usage, having regard to the given differences in descent—but also class the mother's brother with the elder brother. Thus, the change from the clan to the gens has eliminated the classification of the father's sister's children with the first ascending generation, and their classification with the

[1] The Crow address the father's sister as "mother," but refer to her non-vocatively as "aunt."

[2] This phrase is not to be taken as expressing the chronological order of events but simply the conditions of our *Gedankenexperiment* since we are passing from the consideration of a matrilineal to that of a patrilineal tribe.

first descending generation among the Omaha becomes intelligible through the gentile principle. But this principle may be proved to have been operative in a quite unexceptionable manner. The Omaha class the mother's brother's son and all his male descendants, immediate or through males, with the mother's brother. And again as soon as we pass out of the exogamous group, the terminology varies: my mother's brother's son's son is my mother's brother, but my mother's brother's *daughter's* son is my brother since the bond between him and me is no longer gentile but genealogical, through his mother, who is my "mother."[1] According to Morgan these characteristics obtain for all the southern Siouan tribes.[2] In other words, where the matrilineal Hidatsa and Crow Indians class in one category the father's sister and her female descendants, immediate and through females, the patrilineal Omaha, Oto, Kansa, and other southern Siouan tribes unite the mother's brother and his male descendants, immediate and through males, *ad infinitum*. Better proof could hardly be demanded for the theory that the disregard of generations is the result of the exogamous principle.[3]

Exogamy thus furnishes a sufficient explanation of the invasion of the generation principle as encountered in Melanesia and various North American tribes. The chief value of the theory that kinship classification has followed exogamous groupings lies, however, in another direction. It explains the remarkable resemblance between the terminologies of widely separated and quite distinct peoples without recourse to hypothetical historical connections. If we abandon Morgan's theory that the development of the family has been unilinear, with the main stages impressing their stamp on kinship nomenclature, how can we account for the far-reaching similarity between, say, the system of the Seneca of North America and that of the South Indian Tamil? So widespread a custom as exogamy is admirably fitted to explain the distribution of the lineal-

[1] J. O. Dorsey, "Omaha Sociology," *3d Annual Report of the Bureau of Ethnology*, p. 254; Morgan, *Systems*, pp. 335–336.

[2] Ibid., pp. 178–179.

[3] In comparing the Choctaw with the Omaha system of kinship Dr Kohler has called attention to the influence of the rule of descent on nomenclature. See "Zur Urgeschichte der Ehe," *Zeitschrift für vergleichende Rechtswissenschaft*, 1897, XII, pp. 187–353, esp., p. 303.

collateral category, and it seems eminently worth while to extend the verification of the Tylor-Rivers theory both extensively and intensively. Such a study will be far from exhausting the subject of kinship nomenclature. The merging of lineal and collateral relationships constitutes but one of a number of categories, the geographical distribution of each of which must be definitely ascertained. Moreover, we are sadly in need of the intensive investigation of particular systems, giving all the connotations of every term, and indicating by comparison with closely related systems how and why kinship nomenclature changes. A comparative study of all the Siouan, or all the Athapascan, or all the Southwestern systems would be of the greatest value in this respect. However, the connection between exogamy and the "classificatory" system often hinted at but never systematically examined before Dr Rivers's investigations in Oceania, constitutes even by itself a problem of great significance and its partial solution cannot help but to react on a study of other phases of the whole question of kinship terminology.

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THE KNOWLEDGE OF PRIMITIVE MAN[1]

By A. A. GOLDENWEISER

HOW does primitive man think? is the question we are prone to ask when dealing with his mentality. Among elaborate attempts to answer that question one may cite such works as Tylor's *Primitive Culture* or Spencer's *Principles of Sociology*, vol. I, or even such recent works as Lévy-Bruhl's *Les fonctions mentales des sociétés inférieures* and Durkheim's *La vie religieuse*. The authors of these works agree that the intellectual potentialities of the savage are not markedly, if at all, different from our own, but they insist that his thinking is very different indeed. Spencer and Tylor held that the thinking of the savage was vitiated by his premises. Grant the savage his premises, they taught, and his thinking will prove satisfactory. As against these older authors, more recent writers defend the view that something is radically wrong with the thinking itself of the savage.

The cardinal principle pervading savage thought, says Lévy-Bruhl, is the law of participation. Emotional and intellectual associations are established, or indeed exist from the beginning, between beings, things, activities, and the phenomena thus psychically correlated form mental clusters of great stability which determine the character of primitive mentality and make it thoroughly different from ours. Thus it comes that the mind of the savage is proof against the demands of logic, his thinking is *prelogical*. In a review of Lévy-Bruhl's suggestive work[2] and in another of Lévy-Bruhl and Rivers[3] I have attempted to show that Lévy-Bruhl's conclusion is due to a faulty selection of the terms of his comparison, that the principle of participation holds sway in a large domain of our own thinking, that much of savage thinking is as

[1] Read before the American Folk-Lore Society at Philadelphia.

[2] *American Anthropologist*, XIII, 1911, pp. 121–130.

[3] *Current Anthropological Literature*, I, 1912, pp. 103–108.

logical as some of ours, and that when analyzing the categories of thought prevailing in a group, we must always examine these categories within their particular cycle of participation. Then only may we hope to see them in a proper perspective.

In his analysis of Australian totemism Durkheim repeatedly turns to the general problem of savage mentality and attempts to show that the concepts of category, of force, of cause, were born within the religio-magical realm of primitive thought. Totemic classification of nature in accordance with the social divisions of the group thus lies at the root of all classification, while the concepts of cause and force find their matrix in the primitive conception of the totemic principle, which is but an early form of *mana*, the all-pervading magical substance. As against Durkheim's view we must urge that the savage knows of other forms of classification which are not totemic, refer to animals, plants, objects, actions, dreams, and are based on observed differences and similarities between the phenomena classified together or apart. That these tentative classifications should all be reducible to the prototype of totemic categories in nature seems a gratuitous and ill-founded assumption. Similar objections may be raised against the religio-magical derivation of the concepts of cause and force.

The above remarks resolve themselves into a general criticism of most studies of primitive mentality, on the ground that in such studies almost exclusive attention is given to the elucidation and analysis of primitive *thinking*, especially those domains of it which differ most from our own and hence appear to us as irrational, whereas another vast realm of primitive mentality is almost completely neglected, namely the positive knowledge of the savage, the domain of his concrete experience, his familiarity with beings, things, relations, processes, actions. That such a domain exists and that its scope is vast is a fact which readily appears from the data of ethnography.

The knowledge of the properties of material things is always there and in some groups is extensive. The snowhouse of the Eskimo, the wooden structures of the Kwakiutl or Haida, the bark dwellings of the Iroquois, if we restrict our examples to North

America, give evidence of a manifold and, in part, accurate knowledge on the part of their makers, of the properties of the various materials employed, their strength, durability, pliability, etc. In the selection of suitable materials, we observe that certain trees, for instance, are utilized, so and so old and of a given thickness. And, of course, in the preparation of materials for use, long series of processes are gone through which are all based on knowledge of properties of the materials, and mastery of processes of work. We need do no more than point out that such knowledge, based on extensive and prolonged observation and practice, is involved in all industries: the building of houses, canoes, rafts; the making of pottery, basketry, wood-ware; spinning, weaving, tanning of skins; sewing, embroidery, carving, etc. The details of various devices for the hunting, trapping, and snaring of animals, in addition to giving evidence of knowledge of the type referred to above, disclose an equally thoroughgoing and, if anything, more accurate familiarity with the characters and habits of different animals. Unfortunately for the history of thought, the objects of material culture, while giving abundant indication of the direction and concrete result of mental processes, effectively disguise the history of such processes. Every material object of culture represents a chronologically extended series of inventions and adjustments compressed into a spacially and temporally unified system. It is but seldom that a glimpse may be gained into the history of observation, induction, generalization, trial and error, invention, improvement, which all have their share in the development of the final product. The existence and importance of these processes, however, cannot be doubted.[1]

[1] It may, perhaps, be advisable to restrict the above remarks to material culture. Similar considerations, however, can easily be shown to apply to social organization, ethics, law, etc., where, however, the distinction between knowledge and thought is less clearly marked. Thus, in the domain of social organization, we find the understanding of the importance of a central authority, especially on occasions requiring coordinated action, the realization of the principle of equilibration of power, as shown, for instance, in the appointment of two military leaders, among the Seneca-Iroquois, the powers of each serving as a check on those of the other. The fundamental principles of equity, justice, are well understood. Another fact, which in the eyes of many field ethnologists serves more than any other factor to emphasize the psychic unity of savage and civilized, is the former's understanding of human nature. This understanding does not fail to create a bond between the sympathetic ethnologist and his informant, a bond transcending their racial, cultural, and individual differences.

The status of medicine, which combines properties of material and spiritual culture, reveals similar facts. Doubtless the entire field of primitive medicine is pervaded by magical ideas. Here, if anywhere, witchcraft reigns supreme. But on a par with magical devices, prescriptions, incantations, and other accessories of the magical art, closer study reveals a field of experiental knowledge of minerals, parts of animal bodies,and the curative properties of plants, a knowledge that is wide if not always accurate. Such methods of treating disease as the use of emetics, purgatives, blood-letting, massage, are also widely known in primitive communities.

I shall not multiply examples. The subject is an unexplored field, and these remarks are not designed to bring conclusions, but to direct attention to a hitherto neglected aspect of primitive mentality. But enough has been said to suggest some general corollaries.

The savage mind is certainly pervaded by irrational cycles of participation. They do not extend to all sides of life and thought in equal degree or equally at all times, but few if any are the aspects of his mentality which are safe against their intrusion. Based, on their relational side, on emotional and intellectual associations, these cycles of participation, on the side of their concrete content, are so many attempts to interpret nature, its phenomena and processes. On the other hand, the savage faces nature in his direct and daily experience and through his senses acquires an ever-widening knowledge of things, beings, processes, and their relations. He also utilizes this knowledge for his purposes. True, his thinking, the conscious elaboration of his mental content, busies itself but little with this aspect of his mentality. Here the irrational cycles of participation hold almost undisputed sway. This sway, however, cannot be assumed to be absolute; and it may, perhaps, be suspected that insufficient familiarity with the experiential knowledge of the savage is, in the main, responsible for our ignorance of the degree to which consciousness enters into that elaboration of savage experience which brings such conspicuous results most strikingly in the achievements of material culture, but also of spiritual culture.

Another corollary refers to the history of thought. For, as a result of studies suggested in these remarks, we may come to conceive of intellectual progress, from savagery to civilization, not as an evolution of mentality, but as a continuous accumulation of positive knowledge and a correlated advancement in the degree to which such knowledge determines thought.

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ARTIFICIAL MOULDING OF THE INFANT'S HEAD AMONG THE SCANDINAVIAN LAPPS

By GUDMUND HATT

THE custom of influencing the form of the child's head by means of massage, bandages, and narrow[1] caps is still practised by the Scandinavian Lapps, although of late years it is falling into disuse. The term "deformation" would not be very appropriate in this case as no strikingly abnormal forms are produced; on the contrary, the Lapp mothers strive to intensify the brachycephaly, characteristic of the prevailing physical type of the nation. One of their main objects in treating the heads of their children is to make them as perfectly round as possible; and they are most anxious to mould the heads of children who show a tendency to long-headedness, a trait exceedingly repulsive to the esthetic feelings of the Lapps. It is probably due to this fact that the discovery of this custom has been so recently made. The first investigator who discovered this secret of the Lapp mothers was Emilie Demant Hatt. Mrs Hatt and the writer found the custom widespread among the Lapps. Preliminary notes upon the subject were published last year;[2] since, then, however, it has been possible to gather still more interesting data.

Only a minority of the Lapp women adhere to this old practice and know how to perform it properly, though, it seems to be in use, or at least distinctly remembered, by some persons in almost every Lapp camp. Our data were collected in Härjedalen, Jämtland, Västerbotten, Pite Lapmark, and Torne Lapmark.

The most detailed description of the procedure, given by a middle-aged Lapp woman in Pite, shows very clearly that massage

[1] Narrow is used throughout this paper with the meaning of tight-fitting.—Ed.

[2] Emilie Demant Hatt, *Med Lapperne i Højfjeldet*, Stockholm, 1913, pp. 49–50, and note 41. Gudmund Hatt, "Om den kunstige Formning af Barnehovedet hos de skandinaviske Lapper," *Geografisk Tidskrift*, 22, B. H. 11, København, 1913.

played an important rôle, and also that not only the head, but other parts of the body were manipulated.

As soon as the child was born, the midwife, a skilful Lapp woman from the neighborhood, would start to mould its head, nose, ears, chin, neck, fingers, knees, and ankles, applying massage to all these parts, for which purpose her hands were greased with fat from the reindeer's intestines. The same process was repeated after the newborn child had been given its first bath, and repeated after the bath on the two following days. (Lapp infants are bathed every day during the first months of their existence.) In Pite Lapmark this treatment of the head is called "to press (*dæbsjot*) the head" and it is accomplished in the following way: the woman places one hand on the forehead of the child, and with the other open hand she presses against the occiput and strokes the back part of the head, moving the hand upwards. The sides of the head are also pressed and stroked in like manner. Then the woman proceeds to squeeze (*tsibtsot*) the nose of the child between two fingers, so as to produce a beautiful turn-up nose (*gavardas njunje*); this type of nose being especially desirable if the child be a girl. The chin is likewise squeezed and moulded, to make it long and prominent, "like a button." The ears are also squeezed and pulled, in order to make the lower part of them outstanding. Even the tongue is pulled and pinched, that the child may come to speak well. The neck is rubbed (*ruvet*), in order to make it long, which is especially desirable if the child be a boy. The thumbs, as well as the fingers, are bent back, so that the child's hands may become good "lasso-hands"; if a boy, that he be skilful in carving and the making of wooden implements; if a girl, clever at sewing. The ankles are massaged and likewise the knees, that the child may become just sufficiently bandy-legged, but on no account knock-kneed. Ordinarily, the treatment given to the head, nose, chin, ears, tongue, and neck was repeated only during the first three days of the child's life; while the treatment given to the ankles, knees, and fingers was continued for the space of two months. If the mother deemed it necessary, she might continue to mould the head for a longer time, especially if the child showed a tendency to long-headedness, or if the anterior fontanella (*sutte*) remained open too long.

Our Pite informant considered that the manipulation of the head and the nose was the most essential part of the procedure. In olden times, however, the moulding of the other portions of the body was also considered as very important; and she mentioned several old Lapps, now dead, who had abnormally long and prominent chins. In Västerbotten, the Lapps have the notion that long and prominent chins were characteristic of the "ancient Lapps"; in fact, a few persons still living bear this remarkable trait.[1] It is probable that the importance which was formerly attached to a long prominent chin has some connection with the belief, still found in Pite, that a child, boy or girl, born with a tendency to a long chin and also with a long lock of hair on the back of his head, would become a "student," i. e., a sorcerer.

FIG. 38.—Lapp woman moulding the head of her infant with her hands.

The moulding of the nose of the newborn child is also in vogue among the Torne Lapps. The massage treatment of the knees and ankles is practised also in Torne Lapmark and in northern Jämtland. Everywhere, however, the treatment of the head is the most important part of the whole procedure; also, it is the moulding of the head that has the widest distribution even in many localities where the

[1] J. Tornous in the seventeenth century described the Lapps as having long chins (J. Scheffer: *Lappland*. Frankfurt a. M. und Leipsig 1675, p. 34). Hogguer, who in 1828 made a journey in Pite Lapmark, makes a similar remark, and one of his drawings shows a Lapp man with very prominent chin (Hogguer: *Reise nach Lappland*. Berlin, 1841, p. 148).

moulding of other parts of the body has fallen into oblivion or perhaps was never in use.

The massage-like treatment of the head seems to be handled everywhere in about the same manner. Figure 38 shows a Lapp mother in Frostviken, Jämtland, performing this act on her child. (Unfortunately she does not wear her native dress and her child is swathed, which is not a Lappish custom, but one borrowed from the Scandinavian peasants.) She is pressing one hand against the forehead of the child and the other against the occiput. That woman contended that it is the *pressure* of the hands which produces the desired effect, therefore she discarded the stroking movements. "To press (*diettiedet*) the child's head," was the term she used for this operation.

The pressure upon the child's head is also produced in other ways. The practice of wrapping a neckerchief firmly around the child's head, binding it in front on the forehead, is very common; this is done after each treatment with the hands. A silk kerchief is preferred. It seems that some of the Lapp women consider this practice of swathing the child's head as more important than the pressing with the hands; a woman from Jämtland even designated the whole procedure according to the term for this particular process. The pressure exercised by means of the bandage must have been rather considerable in some cases, if we are to trust an old Jämtland Lapp who said: "In old times they used to swathe a child's head so firmly, that they pressed all sense out of it." He did not like this practice; in fact, many Lapps are against it, and even those who practise it emphasize the necessity of its being done cautiously.

FIG. 39.—Lapp girl, three years old, with child's cap.

But even those who do not seek to influence the form of the child's head through pressure by hands or bandages, have in many cases retained a belief in the utility of the child's narrow cap. This form of headdress, worn by infants all over Lapland, is held to have

a very beneficial effect on the growth of the head, preventing it from becoming too long and too large.

The massage-like treatment with the hands and the use of bandages is performed only during the first three to eight days of the child's life, while the head is "soft as dough"; the use of the narrow cap, on the other hand, extends over one, two, or even five or more years, as it is supposed to prevent the head from growing "wildly." The general form of the Lappish child's cap is seen in figure 39 on a girl from Torne Lapmark. It fits very closely to the head and is seldom removed. The infant's cap is made especially narrow, and if it does not fit tightly enough a handkerchief is laid inside it. A few years ago the Southern Lapps were still using reindeer-hide for such caps; now they make them of cloth. In Northern Jämtland the cap of the boy-infant is provided with a special band (*gihpare*) of leather, which goes around the forehead and the sides of the head and is tied behind; this head-band is used upon the child during the space of one year.

When the Lapps are asked why they treat their children's heads in the above-described fashion, they most often will give as their reason an esthetic motive. A nice round head, not too large, is an essential element in the Lapp ideal of beauty; and by means of the three methods described, a well-informed woman is supposed to be able to mould the head of her child to that desired shape. A Lapp woman even spoke derisively of the peasant women, because they do not know how and do not even try to improve the ugly long heads of their children. Often, however, a hygienic motive is given by Lapp women as another reason for these practices, a motive, which seems to lie deeper than the esthetic one.

In many cases it is clear that the main object of the massage treatment and the bandaging is to hasten the closing of the anterior fontanella (*sutte*). A woman in Northern Jämtland proudly showed us that the "*sutte*" was already closed in the head of her little girl aged one month, although it had been comparatively large at the time of birth; her only reason for treating the head of this child was the fear, that the "*sutte*" might otherwise remain open too long; the form of the head, she said, was sufficiently beautiful

from birth. Most of our informants laid stress upon this point. The early closing of the anterior fontanella is held to be necessary for the sound development of the child. Headache is one of the bad results which may come from retardation of the closing of the fontanella. "In olden times, people did not have headaches, and that was because their heads had been treated properly while they were infants," said a woman who defended the old practice, "but now, they let the head grow wildly!"

Fear of the size and persistence of fontanelles is very common among the Lapps; and retardation in their closing is held to be associated with retardation of the faculty of walking,[1] a belief which is evidently based on correct observation, as both traits accompany rachitis. Therefore it seems plausible to conjecture that the hygienic motive for the compressing of the child's head is older than the esthetic motive. The head of a newborn child has such a disquietingly frail appearance, that it is easy to understand that the desire might arise to hasten the ossification of the brain-case; that desire being supported by the experience of the fact, that retardation of the ossification of the cranium is associated with retardation of other branches of the child's development.

Perhaps the idea has been rife (this, however, is hypothetical) that the persistence of the fontanelles is caused by too fast a growth of the brain which could be counteracted by pressure with the hands, by swathing with the kerchief, and by the narrow cap. The pressure with the hands took the character of massage, in which art the Lapps, like a great number of primitive peoples in different parts of the world, are adepts. In fact, as a cure for headache, the Lapps massage the head in a way not so very different from that which they use in moulding the heads of their infants, the idea being "to drive the wind out which has come in through the ears" and which is supposed to cause the pain.

The esthetic motive might very well be of later origin, coming into play when the moulding of the head had already arisen as a result of purely hygienic measures.

[1] Manuscript of Nensén, p. 288, Lycksele (in the University library of Upsala, Sweden).

Hygienic motives underlie, to some extent, the practices pertaining to deformation of the head, which are found so widely distributed in certain regions of France. Icart[1] declared, that cranial deformation was produced by some women, by compressing the heads of infants for the purpose of diminishing the fontanelles. Ambialet[2] also mentions another reason: the fear, that the bones of the cranium might separate under the weight of the brain. This brings to mind what an old Lapp woman in Jämtland told us; she said that in some extreme cases the "*sutte*" was so large, that the head had the appearance of being in two parts; in such instances, of course, the moulding and swathing of the head was particularly necessary. The old women in the region of Toulouse gave Ambialet still another important reason for the use of the head-band, which they place almost vertically on the head of the infant, covering the anterior fontanella. They claimed that this band was a protection against the cold which might easily injure the child through the anterior fontanella.

It is not improbable that some sort of hygienic motive may prevail also among other peoples practising head-deformation. At any rate, the absence of such motives is not proved by the fact that ethnographers have not discovered them; esthetic and social motives are much more easily noticed, and much more striking on account of their apparent absurdity; but wherever hygienic motives exist together with esthetic and social motives, the probability is that the hygienic motives are the oldest. Esthetic and social conceptions might easily become associated with them and influence the moulding of the head, when the custom first had come into existence; but it seems improbable that the women of a tribe would start to mould the heads of their children in order to conform them to esthetic ideals, had they not been acquainted beforehand with the fact that such moulding is possible. Hygienic motives, on the other hand, might directly lead to the use of narrow caps and bandages and to massage treatment of the head and this would, at first unintentionally, result in a moulding of the head.

[1] *Leçons pratiques sur l'art des accouchements*, Castres, 1784.

[2] Ambialet, *La deformation artificielle de la tête dans la region toulousaine*, 1893, p. 10.

I do not claim that all instances of head-deformation have had this origin. Virchow has shown that among the Patagonians another motive, just as rational as the above, is underlying: the infant's head is fastened firmly to the cradleboard, to prevent the head from being tossed back and forth and so being injured when the child is carried on journeys.[1] This motive for bandaging the head of the infant seems to have existed also in other cases. It is not, however, found among the Lapps; although the Lapp infant is laced firmly to the cradle, its head is not fastened, though it is protected by a special little screen.

To what extent the practices above described really do influence the form of the head among the Lapps, I have not been able to ascertain. As I have already remarked, it would be incorrect to speak of "deformation," as the form of head which the Lapp mothers desire to produce is a short, well rounded one, of the type described by Virchow as characteristic of the Lapps.[2] It would, of course, be desirable to compare heads that have been artificially moulded during infancy, with such that have not; investigation of that kind, however, would be attended with great difficulties, owing to the fact that in many cases it would be hard or even impossible to ascertain whether moulding had been attempted or not.

The Lapps themselves claim that the moulding processes may influence the form of the head considerably. A woman told us that one of her children was born with a distorted face, with one eye lower than the other, and that the Lapp midwife moulded the head and face of this infant into the correct shape. Proof of the importance attached by the old-fashioned Lapps to this custom is found in an old tale told by the Pite Lapps about an infant that had been killed by his parents (the latter not having been married to each other), but who in some mystic way came to life again and was brought up by a woman relative; that child grew to manhood. The only peculiarity about him was, that he had a larger head than

[1] *Zeitschrift f. Ethnologie*, XI, 1879, Verhandlung, p. 200.

[2] *Zeitschrift f. Ethnologie*, XI, 1879, Verhandlungen, p. 144. "Im ganzen ergab sich als herschende Kopfform, auch by der blossen Betastung die kurze und runde. Je ausgeprägter dieselbe, namentlich bei gleichzeitiger Höhe, wurde, um so mehr wurde sie geradezu kugel- oder bombenförmig."

was usual among the Lapps, because his head had not been moulded while he was an infant!

It ought to be mentioned that an unintentional deformation is often effected upon the heads of Lapp infants as a result of their cradles. This was still more evident a generation ago, when the Lapps did not place a pillow under the child's head. Old Lapps often show a marked flattening of the occiput, produced in this way in their infancy; the Lapps, themselves, being well aware of the cause. This unintentional deformation was noted as early as 1742 by Major Schnitler.[1] Figure 40 represents an elderly Lapp woman from Southern Västerbotten with the typical round head and a distinctly flattened occiput.

A few words must be said regarding the question whether any historical connection exists between the head moulding of the Lapps

FIG. 40.—Elderly Lapp woman showing characteristic head form.

and similar customs among other tribes. In the first place, it ought to be mentioned that the Finlanders, in several parts of Finland and in Carelia and Ingermanland, mould the heads of their children

[1] *Det norske Geografiske Selskabs*, Aarbog, I, p. 51.

through pressure exercised by means of hands and bandages; J. Lukkarinen[1] has lately discovered this habit which was not known to exist among the Finlanders previously, as no striking and abnormal head forms are produced. So far, we do not know of the custom being practised by any other living people of the Finnish-Ugrian stock. Sidonius Appolinaris tells us that the Huns deformed the heads of their infants by means of bandages; and Amedée Thierry supposes that it was the Finnish-Ugrian element of the Huns that practised this deformation.[2]

In France, the well-known Toulousean deformation of the head is practised to the present day; its historic connections, however, seem quite obscure in spite of all the theories which have been presented. Moulding of the head was certainly practised here and there throughout a large part of middle and southern Europe in earlier times. It is mentioned, though not very definitely, in a Swiss medical book,[3] dated 1697. Andreas Vesalius[4] attributes this custom to the Genoese, Greeks, and Turks. Blumenbach[5] says that the moulding of an infant's head by means of pressure with the hands, bandages, or other ways was practised in Belgium and in some parts of Germany, even as far north as Hamburg. Flower[6] says that the custom of dressing an infant's head with tightly fitting bandages was in vogue in Norfolk, England, until lately. Artificial deformation seems, however, never to have been practised by the Scandinavians, and, therefore, it seems rather doubtful whether any direct historic connection can ever be traced between the above-described Lappish custom and the head-deformation of France and middle Europe. An indirect connection might be found, could it be proved that the customs in question reached Europe from some common center in the east; but for this the necessary data are lacking. Authorities do not even agree as to whether the artificial deformation in France was introduced from outside

[1] In the Finnish periodical "*Suomen Museo*," 1913, p. 12.

[2] Amedée Thierry, *Histoire d'Attila*, Paris, 1856, I, p. 8.

[3] J. Muralt, *Kinder- und Hebammenbüchlein*, Basel, 1697, p. 39.

[4] Vesalius, *Opera omnia anatomica*, Lugduni Batavorum, 1725, I, p. 16.

[5] Blumenbach, *De generis humani*, Göttingen, 1795, p. 216.

[6] W. H. Flower, *Fashion in Deformity*, London, 1881, p. 38.

or whether it originated in that country. Attempts to prove historic connection with the analogous practices of the famous Macrocephales, described by Hippocrates, have failed.[1]

A usage of the kind here discussed does not, as far as I can judge, lend itself very readily to transmission from one people to another except where relations between them are rather intimate. If it does not produce strikingly abnormal forms, it may then exist for hundreds of years in a tribe without being noticed by its neighbors. The Scandinavian peasants seem to know nothing of its existence among the Lapps. On the other hand, if very abnormal head forms are produced, they tend to become tribal characteristics, not readily borrowed by foreign tribes.

As the practices connected with the bringing up of infants are rather apt to escape observation, this side of the life of primitive tribes is by no means as thoroughly known as it ought to be. If the exact distribution of the uses of narrow caps, head-bands, and, particularly, massage-treatment of infants' heads were known, then, probably, some light would be thrown on the question, how and where these customs originated. In studying the subject of artificial moulding of the head, we must not solely regard such cases in which marked deformation has been accomplished; such cases are only extreme instances of customs which have a wider distribution. I wish to emphasize the great rôle which the massage-like treatment of the head plays, not only in Europe, but also among several tribes in India.[2] A massage-like squeezing of the infant's head, followed by the use of a narrow cap, has also been observed among the Eskimo of Frobisher Bay.[3] It is probable, that massage-treatment serves

[1] F. Delisle, "Les deformations artificielles du crane en France," *Bulletins et memoires de la Societé d'Anthropologie de Paris*, T. III (V ser.), 1902, pp. 111–167; Delisle, *Les Macrocephales*, ibid., pp. 26–35.

[2] Jagor in *Zeitschrift f. Ethnologie*, VIII, 1876, Verh., p. 196 (Badagas in the Nilgiri mountains), X, 1878, Verh., pp. 123 and 236 (Nayer and Pulayer castes on the Malabar coast), XI, 1879, Verh., p. 78 (Kanikar tribe in Attrumally mountains, South India) and p. 169 (Vedas, in Trovancore), XIV, 1882, Verh., p. 231 (Naga Kurumbas, Nilgiri mountains). See also Jagor's description of similar practices among the Mincopies, Andaman islands, *Z. f. Ethnol.*, VIII, 1876, Verh., p. 51.

[3] C. F. Hall, *Life with the Eskimaux*, London, 1865, p. 521. Compare the use of narrow infant caps among the Naskapi Indians, described by Turner, *Ethnology of the Ungava District*, II Rep. Bureau of Ethnol., Washington, 1894, p. 291.

as a preliminary step, in some cases, where more effective measures are taken afterwards—this at least holds good for the head-deformation practised by several Indian tribes in the Columbia river region, according to John Scouler.[1]

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[1] Cited by Morton in Schoolcraft, *History, Condition, etc., of the Indian tribes of U. S.*, Part II, Philadelphia, 1854, p. 325.

TYPES OF MACHU PICCHU POTTERY[1]

By HIRAM BINGHAM

ALL the pottery found at Machu Picchu appears to have been hand-made, with the exception of two or three fragments of very recent pottery evidently belonging to the present Indian inhabitants. It seems likely, however, that what may be described as a primitive form of wheel was used in the manufacture of a large part of the ancient pottery. The method may have been such as is at present used in some of the outlying districts (fig. 41).

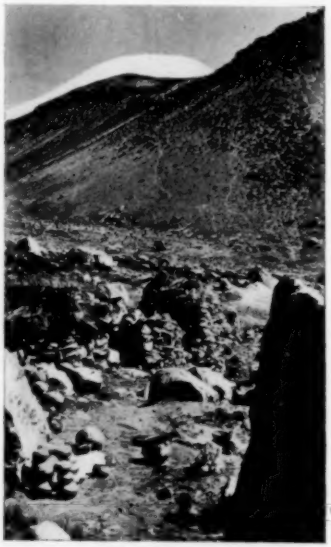

FIG. 41.—Indian potters' huts near the foot of Coropuna. Photograph by H. L. Tucker.

We observed at the base of Mt Coropuna in 1911 some Indian potters working at an elevation of about 14,000 feet, who used rough clay plates on which to build up the pot they were making, and on which the pots were allowed to dry in the sun before being baked. The pottery was made by women, who revolved the clay plate with the left hand while building up the pot with strips of wet clay with the right hand. The pottery was baked in a shallow depression in the ground, covered and surrounded by llama dung, this being ignited by bundles of dried grass laid on top of the whole (pl. xviii).

[1] Read before the American Anthropological Association at Philadelphia.

Peruvian pottery found in the coastal desert region, the source of most of the specimens now in museums, has come down to us in fairly good condition on account of the sand and volcanic ash in

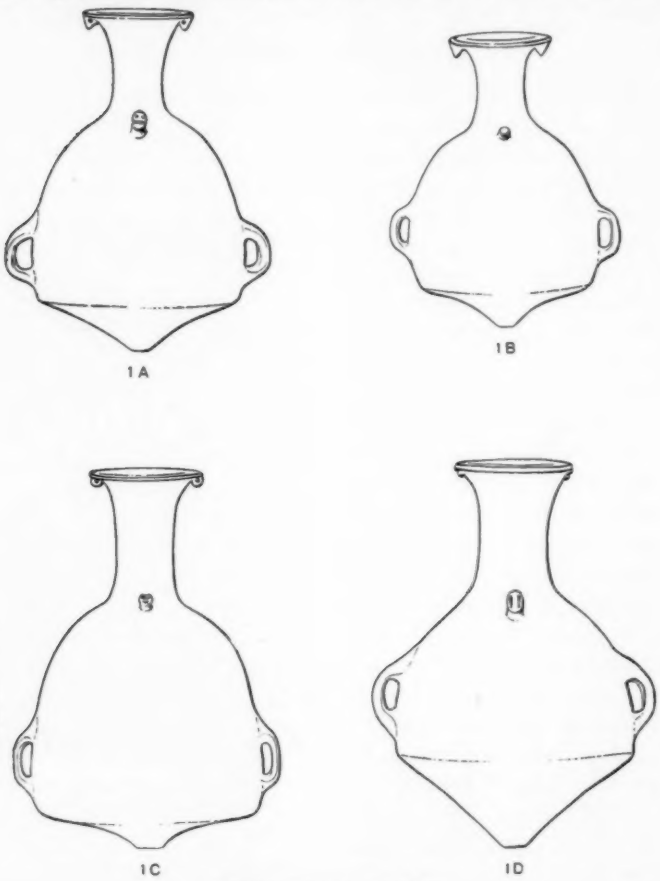

FIG. 42.—Type 1.—Arybállus.

which the cemeteries were placed. One reason for the great scarcity of mountain pottery appears to be that the burials were in caves and other rocky places which did not conduce to the life of the pot.

Machu Picchu was no exception to this rule. Nearly all of the pottery found was in a damaged condition, and much of it is beyond repair. Most of the forms of which we found sufficient pieces to enable us to restore the pots with reasonable certainty oc-

FIG. 43.—Type 2.—Beaker-shaped olla.

curred under rocky ledges or in caves in the jungle (pl. xviii), where in the process of time the roof of the cave had fallen in, or the rough stones used in sealing the mouth of the cave or covering the graves had been responsible for destroying much of the pottery that had been placed there at the time of burial. Some of the fragments of individual pots were found in more than one cave, indicating perhaps that the wild beasts of the jungle in devouring the ceremonial offerings to the departed had smashed the dishes and carried off some of the pieces to neighboring caves, or else that the ceremonial burial offerings had been fragmentary.

Owing to the fact that the collections at Machu Picchu were made under favorable auspices for recording the location of the finds, it has seemed worth while to restore as many of the types as possible.

The object of this paper is twofold: first, to present these types in outline, so as to exhibit the varieties of form that have been

found in this well-preserved and relatively unexplored ruin, the most recent part of which is undoubtedly Inca, however ancient the megalithic structure may be; and second, to offer suggestions toward the adoption of certain definite descriptive terms which may be used in the future in describing pottery from the Cuzco or Inca region.

So much of the Inca pottery bears a striking resemblance to the pottery of Greece, Mycenae, and Troy, that with the generous aid and assistance of Professor Baur of Yale University, I have felt justified in borrowing and adapting a number of terms from classical archeology. It seems to me that it would be distinctly to our advantage in American archeology if we use, wherever possible, terms already adopted and understood by students of classical archeology. In taking a step of this kind no one realizes better than I how many mistakes are liable to occur and how many chances there are for improvement.

FIG. 44.—Type 2.—Beaker-shaped olla.

I have given a number to each of the main types, for example the arybállus I have called Type 1; the beaker-shaped olla, Type 2; the pot cover, Type 3; and so on. I have given a letter to each of the styles of each type; thus the first style treated of the arybállus is called Type 1A, enabling frequent reference to be made to this type and style, while less frequent and more intelligible reference may be made by using the term with the style letter, as for example, Arybállus, Style A.

The different types and the styles of each, as presented in the Machu Picchu pottery, are as follows:—

Type 1A.—*Arybállus.* Style A. Mouth flaring. Two *pierced* earlike nubbins attached to the rim; a single incised conventionalized animal

NEWLY-MADE POTTERY IS TO BE SEEN IN THE FOREGROUND. THE ARROWS INDICATE A SHALLOW DEPRESSION WHERE THE WARE IS BAKED. PHOTOGRAPH BY H. L. TUCKER

CAVE AT MACHU PICCHU SHOWING BONES. PHOTOGRAPH BY G. F. EATON

AN INDIAN FAMILY WHO LIVE AT THE FOOT OF COROPUNA IN HUTS 14,500 FEET ABOVE SEA LEVEL; THE WOMAN AT THE LEFT HAS JUST FINISHED A CLAY VESSEL AND IS MAKING ANOTHER. PHOTOGRAPH BY H. L. TUCKER

head nubbin, attached to the shoulder; two band-shaped handles attached vertically to the body below the ears. Base pointed. Very common.

Arybálli are usually also decorated by means of paint and sometimes a slip. The principal part of the decoration nearly always occurs on the same side as the nubbin. They were intended to be carried on the back and shoulders by means of a rope passing through the handles and around the nubbin. When being carried the decorations would thus be plainly in view.

1B.—*Arybállus.* Style B. Ear-nubs not pierced. Shoulder nubbin *not* incised.

1C.—*Arybállus.* Style C. Mouth not flaring. Neck nearly cylindrical. Handles attached extremely low on the body.

1D.—*Arybállus.* Style D. Ear nubbin incised. Mouth not flaring; handles attached relatively high on the body; base much elongated. Probably a late type. Only one example found.

FIG. 45.—Type 3.—Pot-cover.

2A.—*Beaker-shaped olla.* Style A. (Called *olla* in Spanish because undoubtedly a cooking pot.) All specimens found were very much fire-blackened. In this particular style the bowl is set off at a sharp angle where it joins the foot, which is more elongated than in the other styles. Height: 23 cm.; width: (greatest diameter of the bowl) 16 cm.

2B.—*Beaker-shaped olla.* Style B. Bowl rounded in a continuous curve with the foot, which is of medium height. Example of this style badly broken. Impossible to give original measurements.

2C.—*Beaker-shaped olla.* Style C. Bowl broad and flat, and foot short in proportion to the height. Height: 11 cm.; width: 15½ cm.

No paint. In nearly every case the decorations consist of a low relief attached to the shoulder opposite the handle. These have a wide variety of form.

3A.—*Pot-cover.* Style A. Probably intended for use with the beaker-shaped olla. Handle a band-shaped loop; base nearly flat. Height: 8 cm.; width: 13½ cm.

3B.—*Pot-cover.* Style B. Handle band-shaped, but of one piece with the cover, instead of being attached to it. Base concave. Height: 5½ cm.; width: 11½ cm.

3C.—*Pot-cover.* Style C. Loop-handle, circular in section; base convex. Height: 2 cm.; width: 10 cm.
No paint or other decoration.

FIG. 46.—Types 4 and 5.—Two-handled dish.

4A.—*Two-handled dish.* Style A. A deep dish in which the width is only slightly greater than the height, handles band-shaped, attached horizontally below the rim. Height: 14½ cm.; width: 18½ cm.
All show signs of paint or slip decoration.

4B.—*Two-handled dish.* Style B. A shallow variety in which the height is less than half the width; handles band-shaped, attached horizontally below the rim. Height: 8 cm.; width: 17½ cm.
An uncommon form.

4C.—*Two-handled dish.* Style C. Band-shaped handles attached horizontally *at* the rim. Height: 6 cm.; width: 20 cm.

A rare form.

4D.—*Two-handled dish.* Style D. Band-shaped handles attached horizontally *below* the rim; bottom slightly convex, instead of being flat as in the other styles of this type. Height: 3 cm.; width: 12½ cm.

Painted inside on a white slip that covers the entire dish.

4E.—*Two-handled dish.* Style E. Handles in the form of fierce-looking animals, attached vertically, and connecting the rim and body, the animal heads rising above the level of the rim and tails turned to the right. Fragments of a number of these dishes were found, but it has been impossible to reconstruct a complete specimen. We have been able to assemble nearly one-half of one dish, which measures 12 cm. in height and approximately 23 in width.

A fairly common type, occurring only in the excavations, and not in any of the graves. A fine specimen resembling this type is in the American Museum of Natural History in New York, and is figured in color opposite page 294 of Professor Bandelier's *Islands of Titicaca and Koati.*

5A.—*Two-handled bowl.* Style A. Handles band-shaped, curving slightly upwards above the mouth, and attached vertically, connecting rim and body. Height: 9 cm.; width: 17 cm. Rare.

6A.—*Pélike-shaped jug.* Style A. Ribbon-like handles connecting rim and shoulders. Base flat. Height: 49 cm.; width 27 cm. Fairly common.

6B.—*Pélike-shaped jug.* Style B. Short, rounded handles, connecting rim and shoulders; lip flaring. Height: 17 cm.; width: 16 cm.

6C.—*Pélike-shaped jug.* Style C. Handles band-shaped; attached vertically slightly below the upper rim; base flat. Height: 23 cm.; width: 18 cm.

6D.—*Pélike-shaped jug.* Style D. Bowl markedly larger than mouth. Height: 19 cm.; width 21 cm. Very uncommon.

7A.—*Diota-shaped olla.* Style A. Handles band-shaped, connecting rim and shoulder; base pointed; very much fire-blackened. Height: 27 cm.; width: 19 cm. Rare.

8A.—*Pithos.* Style A. Handles broad, band-shaped and set vertically. Bottom probably flat. Height: 42 cm.; width: 34 cm. Rare.

9A.—*Hydria-shaped olla.* Style A. Two broad, short, band-shaped handles, attached horizontally just below shoulder; third handle attached vertically connecting rim and shoulder. Base pointed. Very much fire-blackened. Height: 13 cm.; width: 14½ cm. Rare.

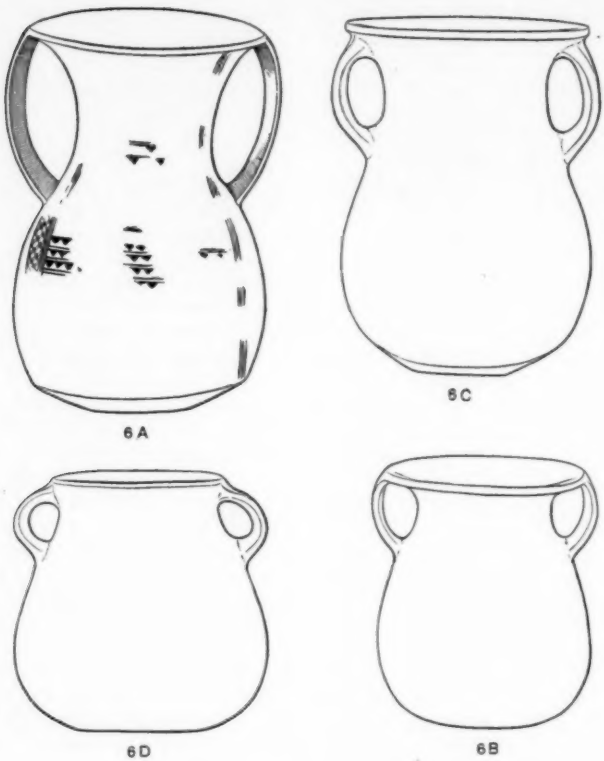

FIG. 47.—Type 6.—Pélike-shaped jug.

10A.—*Lebes-shaped kettle.* Style A. Handles small, band-shaped, attached horizontally to shoulder; lip conspicuously high. Height: 19 cm.; width: 21 cm. Rare.

10B.—*Lebes-shaped kettle.* Style B. Handles band-shaped, attached to body; shoulders decorated with two snakes in relief in the so-called "Barbotine" technique. Height: 14 (?) cm.; width: 16 cm. Rare.

11A.—*Ladle* or *Deep Plate.* Style A. Duck's head handle. Incised double nubbin attached to rim, opposite handle. Height: 3½ cm.; width: 13½ cm. Very common.

FIG. 48.—Types 7, 8, 9, and 10.—Diota-shaped olla, Pithos, Hydria-shaped olla, and Lebes-shaped kettle.

11B.—*Ladle* or *Deep Plate.* Style B. Crested bird's head handle in relief. Height: 4 cm.; width: 14 cm.

11C.—*Ladle* or *Deep Plate.* Style C. Llama or alpaca head handle in relief. Height: 4 cm.; width: 14 cm.

11D.—*Ladle* or *Deep Plate.* Style D. Human head handle, partly in relief, and partly painted. Nubbins not incised. Height: 4 cm.; width: 15 cm.

11E.—*Ladle* or *Deep Plate.* Style E. Loop-handle attached vertically to the rim; double unincised nubbin opposite handle. Height: 3½ cm.; width: 16½ cm. Fairly common.

11F.—*Ladle* or *Deep Plate.* Style F. Loop-handle attached horizontally to rim, and double incised nubbin opposite. Height: 4 cm.; width: 14½ cm. A rare form.

11G.—*Ladle* or *Deep Plate.* Style G. Duck head handle. No nubbins. Height: 4 cm.; width: 13 cm.

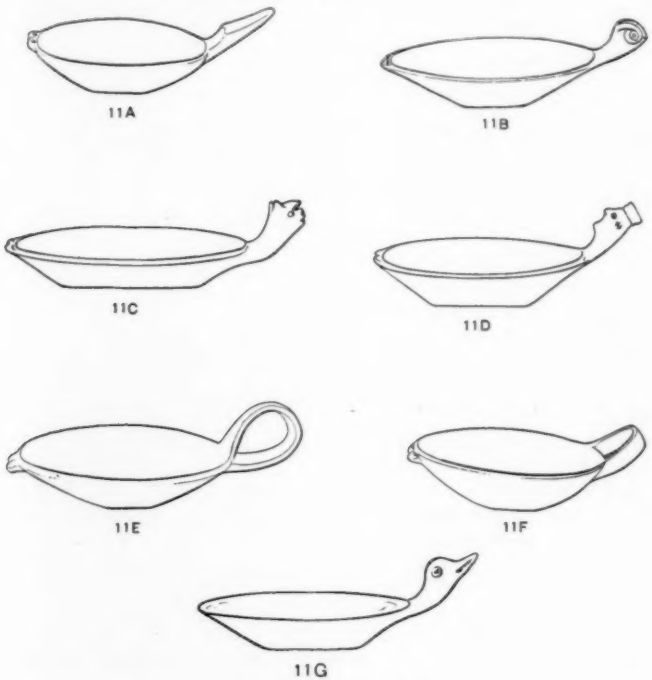

FIG. 49.—Type 11.—Ladle.

11H.—*Ladle* or *Deep Plate.* Style H. Toadstool-shaped handle, incised nubbins. Height: 3½ cm.; width: 15 cm.

12A.—*Deep Plate.* Style A. Two handles attached horizontally to rim. Height: 5 cm.; width: 25 cm. Rare.

12B.—*Deep Plate.* Style B. Incised double nubbins instead of handles. Height: 3 cm.; width: 16 cm. Common.

12C.—*Deep Plate.* Style C. Plain, unincised double nubbins attached to rim instead of handles. Height: 4 cm.; width: 19½ cm. Rare.

12D.—*Deep Plate.* Style D. Without handles or nubbins. Height: 3 cm.; width: 12 cm. Rare.

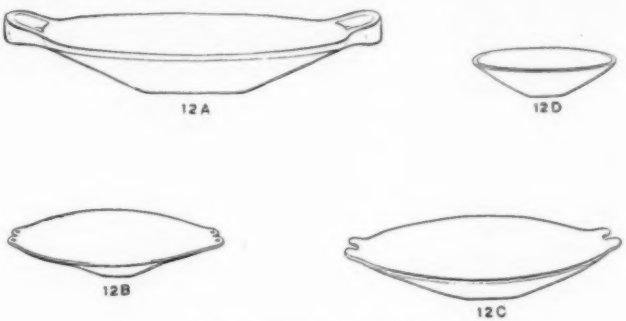

FIG. 50.—Type 12.—Deep plate.

13A.—*Jug.* Style A. Very large loop handle, attached vertically to shoulder. Height: 11½ cm.; width: 11½ cm.

13B.—*Jug.* Style B. Mouth flaring, neck decorated with human face in relief. *Pierced* loop handle attached vertically immediately below rim. Height: 23 cm.; width: 18 cm.

13C.—*Jug.* Style C. Mouth flaring, pierced loop handle connecting rim to body. Height: 10 cm.; width: 11 cm.

13D.—*Jug.* Style D. Neck decorated with human face, partly in relief and partly painted; loop handle, connecting rim and shoulder. Height: 14½ cm.; width: 11 cm.

13E.—*Jug.* Style E. No lip. Neck cylindrical; handle connecting neck and body. Height: 9½ cm.; width: 6½ cm.

13F.—*Jug.* Style F. Neck, probably cylindrical; loop handle attached vertically to shoulder. Height: uncertain; width: 11 cm. Rare.

13G.—*Jug.* Style G. No lip. Neck nearly cylindrical; decorated with human face in relief; shoulder carrying hump on one side and human arms in relief on the other. Loop handle connecting shoulder and body. Height: 17 cm.; width: 13½ cm.

13H.—*Jug.* Style H. No lip. Neck cylindrical; loop handle, attached *horizontally* to shoulder. Height: 15½ cm.; width: 11½ cm.

14A.—*Jar.* Style A. Handle a pierced nubbin attached vertically to shoulder; lip a pierced disk attached to rim. Made as though intended to be used for oil or ointment. Height: 4½ cm.; width: 5½ cm.

15A.—*Cup.* Style A. Sides nearly straight. Height: (?); width: 9 cm. Rare.

15B.—*Cup.* Style B. Concave sides. Height: 9½ cm.; width: 8 cm.

16A.—*Three-legged Brazier with one handle.* Style A. Handle band-shaped, attached vertically to top of brazier; mouth formed with a small lip, irregular in form and placed on one end. Three openings or vent-holes in top. Legs solid and cylindrical. Interior and exterior much fire-blackened. Height: 17½ cm.; width: 15 cm.; depth: 18 cm.

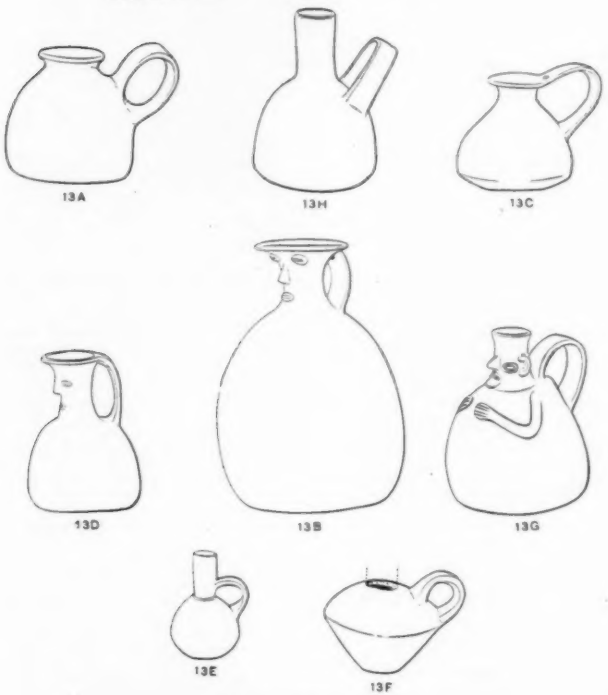

FIG. 51.—Type 13.—Jug.

This is the commonest form not represented in any burial caves, and occurring only in fragments in the excavations in the city. Hitherto the only known specimens of this type, so far as I have been able to discover, are a small model, about 4 cm. in diameter, in the Berlin Museum, and a slightly larger one, about 8 cm. in diameter, in the American Museum of Natural History in New York. Full-sized braziers, of which we found remains of twenty-five or thirty at Machu Picchu, do not appear to have been found anywhere hitherto. These braziers were probably used

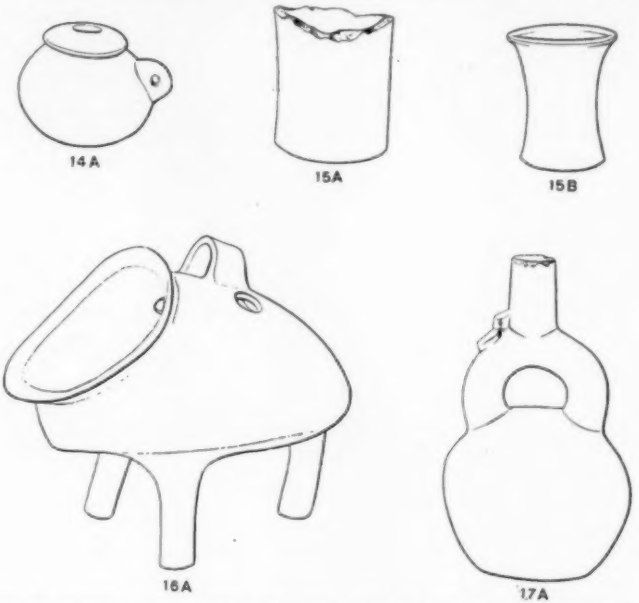

FIG. 52.—Types 14, 15, 16, and 17.—Jar, cup, three-legged brazier, and spherical bottle.

for re-heating or annealing small pieces of metal, presumably by means of a charcoal fire. Dr C. H. Mathewson, Assistant Professor of Metallurgy in the Sheffield Scientific School, tells me that: "There is no question but that small bronze implements could be re-heated very conveniently in a utensil of this shape." He adds: "If I were going to anneal an article of this kind I could easily make use of a utensil of this sort. I could take it to the laboratory now and use it for that purpose. It has an enclosed

chamber with provision for blowing if desired, the openings being properly located for this purpose."

17A.—*Spherical Bottle.* Style A. Neck stirrup-shaped; conventionalized animal attached to one side of neck. Height: 23 cm.: width: 13 cm. Only one found.

Conclusion

The common types of pottery at Machu Picchu are:—

(1) *The arybállus*, that most characteristic Inca form. It is found in great variety at Machu Picchu, varying from 13 to 90 centimeters in height, the latter size being not at all uncommon.

(2) *The beaker-shaped olla* or cooking-pot, of which many specimens were found in the more recent graves, and which vary in size from 9 to 43 centimeters in height, and from 10 to 29 centimeters in width.

(3) *Pot-covers*, evidently intended for use with the beaker-shaped ollas, and varying in size from 2 to 4 centimeters in height, and from 10 to 18 centimeters in width, corresponding to the various sized openings of the beaker-shaped ollas.

(4) *Two-handled dishes*, usually found in the same grave with the beaker-shaped ollas, and varying in height from 5 to 15 centimeters, and in width from 7 to 24 centimeters.

(5) *Pélike-shaped jugs.* Although very rare, almost unknown in other parts of South America, this form was common at Machu Picchu. The specimens vary in height from 27 to 49 centimeters, and from 11 to 14 in width, and occur in the more recent graves.

(6) *Deep ladles, or plates with a handle on one side*, and a double nubbin opposite, somewhat resembling the Greek *patera* in form,—the handle sometimes being a broad loop, but more often a conventionalized animal or bird head. They differ but little in size, the average being about 3½ centimeters in height and 16 in width.

(7) *Jugs*, with loop-handles, and varying in size from 7 to 23 centimeters in height and from 6 to 18 centimeters in width.

These are all well-known Cuzco-style types, and occur most often in later graves containing the best skeletal material.

In conclusion, one may say the evidence of the pottery found at Machu Picchu tends to point to two distinct periods, an early period, represented by forms rarely found in collections of Inca material, and a later period, the period when the more recent burials were made, represented by well-known types of the so-called Cuzco style or pure Inca.

Finally, with regard to the use of terms: The word *arybállus* has been for some time adopted without question as a descriptive term applying to the well-known Inca bottle-shaped vase with ears, low handles, and a pointed base. The new terms submitted herewith are: *beaker-shaped olla; diota-shaped pot; pithos; pélike-shaped jug; hydria-shaped olla;* and *lebes-shaped kettle.*

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KIVAS OF THE SAN JUAN DRAINAGE[1]

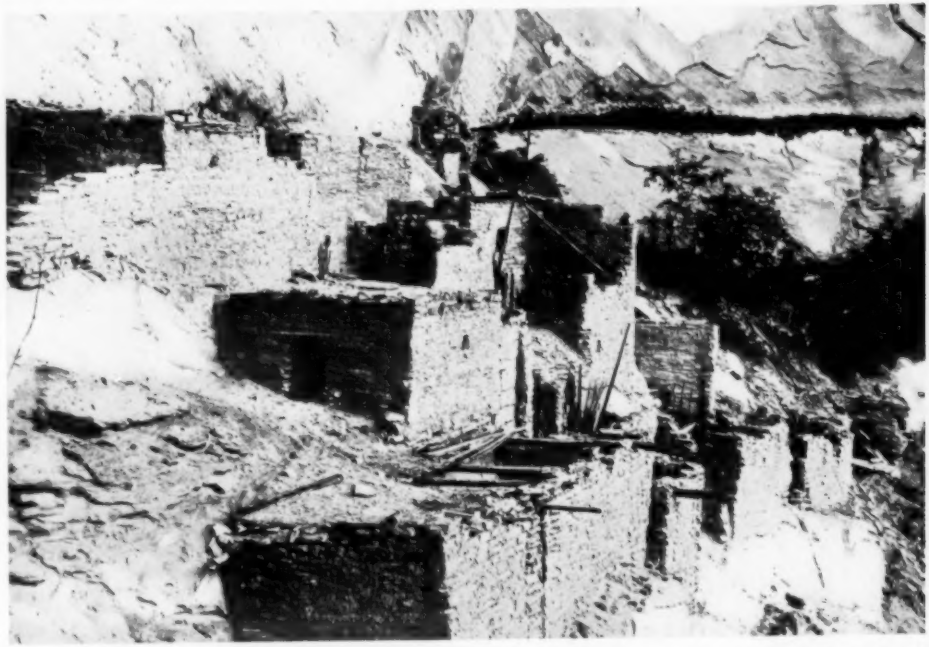
By BYRON CUMMINGS

TO one who has tramped or ridden all day across the sandy plains of the Navajo or Hopi reservations without finding a spring or a decent water hole, there is no need of explaining the importance of mother earth and the rain gods in the theology of the Indians of that region. The scanty vegetation draws its sustenance from the soil; the pockets in the rocks store the precious fluid that keeps flocks and herds alive; and from the crevices in the cliffs man draws the life-giving nectar of the gods and goes on his way with a prayer of thanksgiving on his lips. Is it any wonder that the Indians who drew their sustenance from that scanty soil centuries ago and their still primitive descendants look upon the earth as their cherishing mother and upon the rain clouds as benign beings coming from the four quarters of the earth to bless mankind? Man must ever worship some power which he recognizes as superior to himself, must personify it, clothe it with life and initiative and capacity to understand his petitions. In so far as the attributes of that power are beyond his comprehension, superstition holds sway and the primitive imagination runs riot, filling religious observances with all sorts of fantastic forms and concepts.

The early inhabitants of our southwestern plains were evidently struggling toward a truer comprehension of the phenomena manifest about them and a determination of their relationship to those phenomena. They grasped germs of great truths and filled in the background with a strange mixture of half truths and imagination that custom welded into divine laws that the gods insisted must be carried out with great precision.

As an expression of belief in the sustaining power of mother earth, the greater number of the ceremonial chambers of the ancient and modern population of the Pueblo country are sunk beneath the

[1] Read before the American Anthropological Association at Philadelphia.



BATATAKIN (SIDE HILL HOUSE) SHOWING A RECTANGULAR CEREMONIAL ROOM IN THE CENTER. SAGIE CAÑON, ARIZONA

surface of the earth and form halls located wholly or in part beneath the floor level of the living rooms of the village. Thus the priests descend again into the embrace of the earth-mother and come into closer touch with that mysterious life-giving power which they see her manifest on every hand. In the creation myths of the Hopi, the Zuñi, and the Navajo we find accounts of how mankind has emerged from the interior of the earth, struggling upward with the help of the gods from one plane of existence to another until they are able to climb out upon the surface of the earth and endure the full light of the sun-father. This underground chamber, called by the Hopi, a kiva, represents the last stopping place or stage of existence before man emerged on to the surface of the earth (fig. 53).

FIG. 53.—A kiva with irregular recesses and a *sipapu* situated between the fire screen and the entrance to the sacred passage, Kayenta, Arizona.

Thus it commemorates the important phase—achievement—in that great struggle of mankind toward the fuller light of the present day.

In the *sipapu*, the opening in the floor situated usually a little beyond the center and in line with the fire-box and entrance to the shaft, we have represented the opening from which the spirits of

men have passed from the interior of the earth on their journey to the presence of the sun-father. The fire-box, usually located close to the center, represents the invigorating heat of the sun-father whose presence they are approaching. Here they pause and warm and dry themselves, as their existence heretofore has been in regions that are cold, dark, and damp. After they have become accustomed to the warmth and dim light of the kiva, they pass on by the fire screen and enter the passage through the side wall at the floor level which leads to the bottom of a small shaft which extends usually vertically into the open air above. Through this passage they ascend to the surface of the earth. Thus man has accomplished his journey, stands in the presence of the sun-father, and begins his career in the great out-of-doors of the world's forces.

In the ruins of the cave and cliff people of the San Juan drainage that we have examined, this underground chamber is almost invariably round, evidently following the form of the most primitive dwelling of these people and thus recording the history of their architecture. Primitive people everywhere seem first to have constructed for themselves circular homes. We see this manifest among the neolithic people of Europe and Asia as well as among the aborigines of America. In the San Juan drainage all of the oldest homes we have found, buildings that plainly antedated the well constructed cliff-dwellings, are circular in form.

The past summer we found some interesting groups of houses in a section of very rough country that seemed comparatively unknown. In a deposit of clay and broken shale which had partially filled numerous caves of the section, the people had excavated circular rooms, roofing them over with poles, brush, cedar bark, and clay. In some instances these older habitations were filled up, and well constructed rooms of stone and clay of the so-called "Cliff-Dwellers" built above them. In other sections as in Sagie ot Sosie cañon, a branch of the Moonlight, and in Water Lily cañon, a branch of the main Sagie, we have found numerous instances of circular rooms constructed of flat stone set up on edge, braced by posts and poles and the holes filled with grass, cedar bark, or clay. Some of these, judging from their location and construc-

tion, plainly were ceremonial chambers; others served merely as living rooms. Many are in such a state of decay that it is impossible to determine the uses to which they were put; but all are of circular form.

In the older kivas of the "Cliff-Dwellers" one finds the walls built of roughly constructed masonry with four strong posts set into them to serve as supports for the larger timbers that carry the weight of the roof. As they learned to break the stones more evenly and lay them up more firmly, they made the walls stronger, letting well built pilasters take the place of the supporting posts, and setting the wall between them back a few inches after it had reached a height of about three feet from the floor. These intervening spaces made excellent recesses for storing ceremonial material and perhaps also convenient places to sleep when men wished to see visions and secure answers to the questions that were disturbing

FIG. 54.—Kiva 20 ft. in diameter showing a bench extending around the entire chamber, Water Lily cañon, Arizona.

their peace of mind. The pilasters and accompanying recesses usually number six, although we find many variations from this form. In White cañon we have found well-made kivas with five pilasters, in Sagie cañon, kivas with two and three recesses up near the roof and others with no recesses at all, the wall having been

built strong and smooth from the floor to the ceiling. On the Kayenta in 1909 we found a kiva in a cave ruin in a small side cañon, that has a bench extending exactly half way round the circular chamber. This kiva is fifteen feet in diameter, its walls are exceedingly well built, and the curve of the room very regular.

In Twin Cave House in Water Lily cañon, one of the head branches of Sagie cañon, we found a kiva 20 feet in diameter which has a bench 2 feet high extending entirely around the chamber (fig. 54). This building is very well constructed and has the greater part of the bench paved with thin flat stones. A large one forms the top of the entrance to the shaft, or sacred passage. A rectangular box-like depression in the floor 4 by 8 inches takes the place of the circular *sipapu* which we have found in the other kivas. The fire screen was made by standing two short posts firmly in the clay floor, two feet apart, and filling in the space between with upright sticks plastered with clay. In the lower part of the wall near the floor you usually find one or more cubby-holes about 8 by 10 inches and 6 to 10 inches deep. These were probably used as receptacles for prayer plumes and sacred medicines.

The roofs are either flat or dome-shaped, both varieties of which have been well described by Dr Fewkes in his monographs on Spruce Tree House and Cliff Palace in Mesa Verde National Park, Colorado, and by Mr Morley in his discussion[1] of the ruins of McElmo cañon. The greater number of these kivas have flat roofs supported by heavy timbers which rest upon the pilasters, or, where there are no pilasters, are bedded into the top of the wall. At right angles and resting upon these are poles placed from 6 to 12 inches part. Upon these and also at right angles rests a layer of split cedar or of willow twigs laid closely together. Over these is a thick layer of cedar bark or rushes and this, in turn, is overlaid with about 3 inches of clay packed closely by treading. The dome-shaped roofs are obtained by placing smaller and shorter timbers from the top of one pilaster to the one next adjacent, and others across the angles thus formed by the ends of the first tier, gradually drawing them toward the center until the roof beams close the space or

[1] *American Anthropologist*, October–December, 1908, pp. 596–610.

leave only a small hole in the top. Upon these supporting timbers are placed a layer of brush or cedar bark and then all is covered and leveled with earth and clay.[1] To one side of the center in both forms of roof is left a rectangular opening about 2 by 2½ feet by which access to the kiva is had on a ladder.

In some of the cave pueblos, as in Batatakin and Bat-woman houses in branches of Sagie cañon, no circular ceremonial chambers are found. Rectangular rooms built on the same level as the living rooms seem to have been used for that purpose. Taking one from Batatakin as typical (pl. xix), the entrance is at the side and opens upon a platform that extends from the threshold to the fire screen which rises from the edge of the fire-box. The fire screen, built up of masonry five inches thick, is 2 feet wide and 2 feet 6 inches high. The floor of the chamber is the solid rock of the cave floor, and contains no *sipapu*. A shallow circular depression that has been pecked into the rock 18 inches from the fire-box suggests a *sipapu*, though probably it is not one. In the roof above the fire-box is an opening 8 by 10 inches which probably served for the exit of the smoke. Midway in the front wall and 4 feet 6 inches from the floor is an opening, 4 by 5 inches, that has been carefully prepared. This may be the suggestion of the sacred passage, but there is no exterior shaft manifest. The back wall is formed of the cliff wall of the cave and contains an irregular jog which served as a shelf. There were at least four such chambers in Batatakin and two in Bat-woman House. In the latter pueblo, however, all rooms in the central part of the cave were so badly destroyed by huge blocks of stone that had fallen from the roof of the cave that it is impossible to be at all sure of the detailed character of the respective rooms.

On the back wall of the Bat-woman House is painted a large image of the Bat-woman and on the side wall of Batatakin a similar image of the slayer god. Since these images are found only in these pueblos where there are no circular chambers, and since these villages show as high development in the arts of weaving and

[1] This method of construction is shown in one form of hogan built by the Navajo in that region today.

pottery-making as is found anywhere, and since also we are able to obtain from old Navajo priests a reasonable explanation of these images, it is probable that these are as recent as any of the Cliff-Dwellers' villages.

The old Navajo relate the myth of the Bat-woman and the slayer god as follows:

> A very long time ago their people used to be destroyed by the big animals that lived in the country. The last of these big animals were the big eagles, which lived on the top of Shiprock, a steep isolated cliff in northwestern New Mexico, and used to swoop down upon their villages, carry off their women and children, and steal their turquoise. Finally, they appealed to the Slayer God to help them. He went to the top of Shiprock, killed the big eagles, and took all their feathers. When he turned to come down, the cliff was so steep that he was afraid to try it. Pretty soon Bat-woman, his grandmother, came along and he asked her to help him. She said she would if he would get into her basket, which she always carried suspended by fine silken threads, and keep his eyes closed until they reached the ground. He thought the cords looked pretty small; but she bounced the basket up and down and showed him how strong they were. Knowing that his grandmother would never deceive him, at length he got into the basket and was taken down to the ground. But on the way, while his eyes were closed, the Bat-woman threw all of the eagle feathers into the air, and they turned into birds. That is why we have so many birds. Since then the people have never been troubled by big animals. The Slayer God is the son of the sun-father and a beautiful, chaste Navajo girl, the daughter of the Bat-woman.

In Pine Tree House, a cave pueblo of thirty-six rooms which we discovered last summer near the head of Nitznoeboko, a branch of the Sagie cañon, we found at the extreme front of the cave the remains of a circular room built into the cliff, in the old style, with flat stone on edge and braced with posts; and near one end of the cave an old kiva of circular form, though somewhat irregular; while toward the other end and opening off from a little court, was a rectangular room that had plainly served the purpose of a ceremonial chamber. The circular room was sunk below the level of the surrounding rooms in a large hole between sections of the cliff

floor of the cave, and consequently, was not perfectly round. It was 5½ feet deep; and its average diameter was 8½ feet. Against the rock, on the front side, was the fireplace; while 3 feet to the right, was the entrance to the shaft, or sacred passage, which opened out into a tiny triangular court on that side of the chamber. There was no fire screen, as the location of the fire-box seemed to preclude the need of one. In the inside of the sacred passage, 12 inches from the top, are two small oak sticks set into the masonry of the walls at right angles to each other. A similar arrangement is found in the shafts of some kivas in the White cañon on the north side of the San Juan. This seems to preclude the use of the shaft for profane purposes. The fact that the roof was entirely gone and the chamber filled with all sorts of rubbish seems to indicate that the community had ceased to use this room and had transferred their ceremonies to the larger rectangular room in the other part of the village. This chamber measured 10 feet 1 inch by 10 feet 5 inches and contained a fire-box and a *sipapu*. The *sipapu* is rectangular, and measures 24 by 10 by 5 inches. It was covered by a piece of plank which rested upon a planting stick.

These rooms illustrate well the relationship that plainly existed between the two forms of ceremonial chambers. The circular ones are evidently the older and more numerous. They served the communities as churches, council chambers, and workshops for the men; and were the center of the religious and social life of the respective communities. The rectangular rooms were a later development, and served a similar purpose among the members of clan societies, organized through the influence of immigrants into the region, whose religious customs differed somewhat from the parent stock of the people.

Some interesting conditions are also found in the ceremonial caves of the region, showing the circular idea of the earlier kiva in these earliest places of worship. One in Montezuma creek cañon which we found several years ago, is a small semicircular cave, reached only by a staircase of foot holes pecked in the smooth side of the cliff. These holes were nearly obliterated and had to be pecked out afresh before one could reach the cave which contained

little more than a fireplace. Another found last summer in Monument park was reached only by swinging one of our number over the cliff 75 feet down to a small landing, and then dropping a rope down a hundred feet to the bottom. By this we made our way, hand over hand, to the landing; and thence, we climbed into the interior of the cave. In the inner slope we could trace here and there the remains of foot-holes cut in the rock, but those in the cliff outside evidently had been entirely obliterated. At the back of the cave there is a sandy terrace which is quite level. On this had been set up flat stones in a circle 12 feet in diameter (pl. xx). Buried in the sands that had drifted into this inclosure and scattered down the slope for several feet were hundreds of beads of bone, jet, slate, agate, turquoise, and shell, also several pipes, several arrow and spear points, some arrows and weaving sticks, and many small canopies made of twigs tied with yucca cord. In front and just outside this circle was a coarse black jar, 16 inches high. This was buried in the sands that had accumulated since the cave was used, and was covered closely with a flat stone. In it were a string of fifty small wooden cylinders, 36 wooden pendants, shaped like truncated cones, a string of 40 half-gourd shells, a bundle of prayer sticks and bone awls, and four carved wooden birds (fig. 55). Here evidently was a shrine of the rain gods. Here they brought their offerings of beads and feathered arrows, and the emblems of their christening ceremonies. Here the priests stored the articles which they used in the sacred rites performed to secure the favor of the gods and the blessing of their fields. The four birds of different sizes probably represent the messengers of the rain gods of the east, west, north and south; the wooden beads, the pendants,

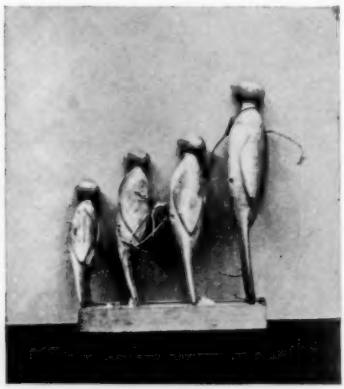
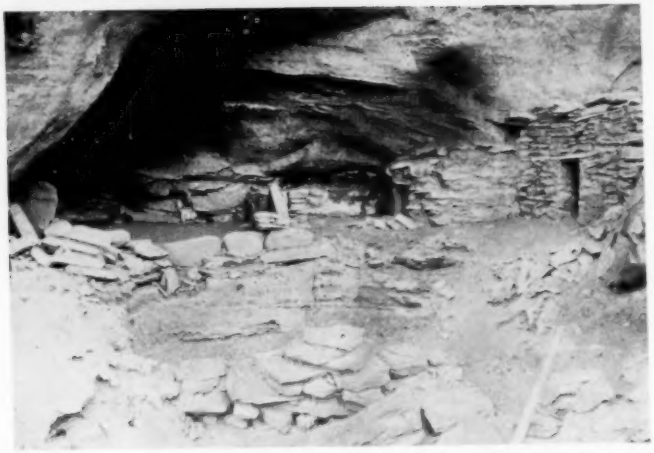
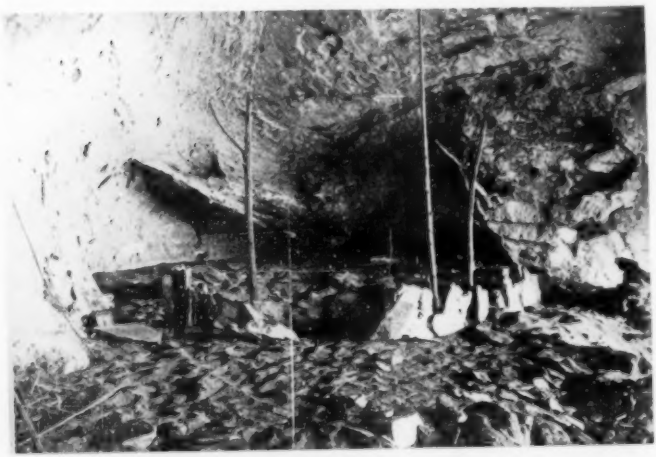


FIG. 55.—Wooden birds from ceremonial cave, Monument Park, Utah.



KIVA EXCAVATED IN THE SHALE AND CLAY WITH RUINS OF CLIFF DWELLERS ABOVE. MONUMENT PARK, UTAH



CEREMONIAL CAVE, SHOWING CIRCLE OF STONES ON A SMALL TERRACE AT THE BACK. HERE WERE FOUND BIRDS, BEADS ETC.

and the half-gourd shells were probably the decorations of the priests as they danced and chanted to the rain gods; while the wooden canopies (placed over the head of a new-born babe to secure the protection of the gods, according to an explanation given us by an old Navajo medicineman) probably represented the canopy of the heavens with the circle of the horizon, the homes of the rain gods of the east, west, north, and south, and the paths across the heavens which lead to the respective abodes of those deities.

In a room in Pine Tree House in Sagie cañon we found, together with numerous weaving sticks and spindles, a band made of splints woven together with yucca cord and bordered on each side with a row of pine nuts strung on cotton cord. The band is painted with a design in black and white. With the assistance of Mrs John Wetherill of Kayenta, Arizona, who possesses a remarkable understanding of the Navajo people and their language, we obtained the following interpretation of this design from Navajo medicinemen: The black and white lines at top and bottom represent the horizon with its dark earth line and the bright light of the sky; the black terraced triangles represent the rain clouds; the broad zigzag lines of white, the lightning; and the vertical white lines, the pillars of beads that hold up the rain clouds so that there will never be any more floods. This band formed the headdress of the priest who impersonated the slayer god in the ceremony commemorating the saving of the people from the great flood that occurred a long, long time ago; but this ceremony, he said, had not been celebrated by his people for a long time.

A peculiarly shaped basket was found in a room in Bat-woman House, and is similar to one found in a cave in Sagie cañon in 1909. It is probably a ceremonial basket; and, according to the explanation of our old Navajo friend, was carried by the war god (the slayer god) to hold his arrows and sacred medicines in the ceremony above described. The two peculiar shaped lobes at the bottom represent the ears of the Bat-woman, the grandmother of the slayer god, who always aided her grandson in his efforts to help the people.

The elaborate design, carried out in color, represents in the bands of black and white the horizon lines of earth and light; the

dark broad bands, the rain clouds; the dark triangles, the water jugs of the rain gods; and the white zigzag lines, the lightning.

While both Navajo and Hopi priests and clan leaders seem able to give reasonable explanations of much of this ancient ceremonial material, is it not remarkable that medicinemen of the Tachinie clan, the oldest clan of the Navajo, seem to be the only ones able to give such ready and definite interpretation to so much of the prehistoric symbolism? It seems to us to indicate quite a close connection between the Tachinie clan of the Navajo and the Cliff Dwellers of the region.

UNIVERSITY OF UTAH

EIGHTEEN PROFESSIONS[1]

By A. L. KROEBER

ANTHROPOLOGY today includes two studies which fundamental differences of aim and method render irreconcilable. One of these branches is biological and psychological; the other, social or historical.

There is a third field, the special province of anthropology, concerned with the relation of biological and social factors. This is no-man's-land, and therefore used as a picnic-ground by whosoever prefers pleasure excursions to the work of cultivating a patch of understanding. Some day this tract will also be surveyed, fenced, and improved. Biological science already claims it; but the title remains to be established. For the present, the labor in hand is the delimitation of the scope of history from that of science.

In what follows, historical anthropology, history, and sociology are referred to as history. Physical anthropology and psychology are included in biology.

1. *The aim of history is to know the relations of social facts to the whole of civilization.*

Civilization means civilization itself, not its impulses. Relation is actual connection, not cause.

2. *The material studied by history is not man, but his works.*

It is not men, but the results of their deeds, the manifestations of their activities, that are the subject of historical inquiry.

3. *Civilization, though carried by men and existing through them, is an entity in itself, and of another order from life.*

History is not concerned with the agencies producing civilization, but with civilization as such. The causes are the business of the psychologist. The entity civilization has intrinsically nothing to do with individual men nor with the aggregates of men on whom

[1] Read by title at the Philadelphia meeting of the American Anthropological Association.

it rests. It springs from the organic, but is independent of it. The mental processes of groups of men are, after all, only the collected processes of individuals reacting under certain special stimuli. Collective psychology is therefore ultimately resolvable into individual human psychology, just as this in turn is resolvable into organic psychology and physiology. But history deals with material which is essentially non-individual and integrally social. History is not concerned with the relations of civilization to men or organisms, but with the interrelations of civilization. The psychic organization of man in the abstract does not exist for it, save as something given directly and more or less completely to the student's consciousness. The uncivilized man does not exist; if he did, he would mean nothing to the historian. Even civilized man is none of history's business; its sphere is the civilization of which man is the necessary basis but which is inevitable once this basis exists.

4. *A certain mental constitution of man must be assumed by the historian, but may not be used by him as a resolution of social phenomena.*

The historian can and should obtain for himself the needed interpretation of man's mind from familiarity with social facts and the direct application to them of his own psychic activities. This interpretation is likely to be of service in proportion as it emanates immediately from himself and not from the formulated laws of the biological psychologist. Whether an understanding of civilization will or will not help the psychologist is for the latter to determine.

5. *True instincts lie at the bottom and origin of social phenomena, but cannot be considered or dealt with by history.*

History begins where instincts commence to be expressed in social facts.

6. *The personal or individual has no historical value save as illustration.*

Ethnological genealogies are valuable material. So are the actions of conspicuous historical personages. But their dramatic, anecdotic, or biographic recital is biographic or fictional art, or possibly psychology, not history.

7. *Geography, or physical environment, is material made use of by civilization, not a factor shaping or explaining civilization.*

Civilization reacts to civilization, not to geography. For the historian, geography does not act on civilization, but civilization incorporates geographical circumstances. Agriculture presupposes a climate able to sustain agriculture, and modifies itself according to climatic conditions. It is not caused by climate. The understanding of agricultural activity is to be sought in the other phenomena of civilization affecting it.

8. *The absolute equality and identity of all human races and strains as carriers of civilization must be assumed by the historian.*

The identity has not been proved nor has it been disproved. It remains to be established, or to be limited, by observations directed to this end, perhaps only by experiments. The historical and social influences affecting every race and every large group of persons are closely intertwined with the alleged biological and hereditary ones, and have never yet been sufficiently separated to allow demonstration of the actual efficiency of either. All opinions on this point are only convictions falsely fortified by subjectively interpreted evidence. The biologist dealing with man must assume at least some hereditary differences, and often does assume biological factors as the only ones existent. The historian, until such differences are established and exactly defined, must assume their non-existence. If he does not base his studies on this assumption, his work becomes a vitiated mixture of history and biology.

9. *Heredity cannot be allowed to have acted any part in history.*

Individual hereditary differences undoubtedly exist, but are not historical material because they are individual. Hereditary differences between human groups may ultimately be established, but like geography must in that event be converted into material acted upon by the force of civilization, not treated as causes of civilization.

10. *Heredity by acquirement is equally a biological and historical monstrosity.*

This naive explanation may be eliminated on the findings of biology; but should biology ever determine that such heredity operates through a mechanism as yet undiscovered, this heredity must nevertheless be disregarded by history together with con-

genital heredity. In the present stage of understanding, heredity by acquirement is only too often the cherished inclination of those who confuse their biological thinking by the introduction of social aspects, and of those who confound history by deceiving themselves that they are turning it into biology.

11. *Selection and other factors of organic evolution cannot be admitted as affecting civilization.*

It is actually unproved that the processes of organic evolution are materially influencing civilization or that they have influenced it. Civilization obviously introduces an important factor which is practically or entirely lacking in the existence of animals and plants, and which must at least largely neutralize the operation of any kind of selection. Prehistoric archeology shows with certainty that civilization has changed profoundly without accompanying material alterations in the human organism. Even so far as biological evolution may ultimately be proved in greater or less degree for man, a correspondence between organic types and civilizational forms will have to be definitely established before history can concern itself with these organic types or their changes.

12. *The so-called savage is no transition between the animal and the scientifically educated man.*

All men are totally civilized. All animals are totally uncivilized because they are almost totally uncivilizable. The connecting condition which it is universally believed must have existed, is entirely unknown. If ever it becomes known, it can furnish to the historian only an introduction to history. There is no higher and lower in civilization for the historian. The ranging of the portions of civilization in any sequence, save the actual one of time, place, and connection, is normally misleading and always valueless. The estimation of the adult savage as similar to the modern European child is superficial and prevents his proper appreciation either biologically or historically.

13. *There are no social species or standard cultural types or stages.*

A social species in history rests on false analogy with organic species. A stage in civilization is merely a preconception made plausible by arbitrarily selected facts.

14. *There is no ethnic mind, but only civilization.*

There are only individual minds. When these react on each other cumulatively, the process is merely physiological. The single ethnic or social existence is civilization, which biologically is resolvable purely into a product of physiological forces, and historically is the only and untranscendable entity.

15. *There are no laws in history similar to the laws of physico-chemical science.*

All asserted civilizational laws are at most tendencies, which, however determinable, are not permanent quantitative expressions. Nor are such tendencies the substitute which history has for the laws of science. History need not deny them and may have to recognize them, but their formulation is not its end.

16. *History deals with conditions sine qua non, not with causes.*

The relations between civilizational phenomena are relations of sequence, not of effect. The principles of mechanical causality, emanating from the underlying biological sciences, are applicable to individual and collective psychology. Applied to history, they convert it into psychology. An insistence that all treatment of civilizational data should be by the methods of mechanical causality is equivalent to a denial of the valid existence of history as a subject of study. The only antecedents of historical phenomena are historical phenomena.

17. *The causality of history is teleological.*

Psychological causes are mechanical. For history, psychology is assumable, not demonstrable. To make the object of historical study the proving of the fundamental identity of the human mind by endless examples is as tedious as barren. If the process of civilization seems the worth-while end of knowledge of civilization, it must be sought as a process distinct from that of mechanical causality, or the result will be a reintegration that is not history. Teleology of course does not suggest theology to those free from the influence of theology. The teleology of history involves the absolute conditioning of historical events by other historical events. This causality of history is as completely unknown and unused as chemical causality was a thousand and physical causality three thousand years ago.

18. *In fine, the determinations and methods of biological, psychological, or natural science do not exist for history, just as the results and the manner of operation of history are disregarded by consistent biological practice.*

Most biologists have implicitly followed their aspect of this doctrine, but their consequent success has tempted many historians, especially sociologists, anthropologists, and theorists, to imitate them instead of pursuing their proper complementary method.

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THE FAMILY HUNTING BAND AS THE BASIS OF ALGONKIAN SOCIAL ORGANIZATION

By FRANK G. SPECK

THE following paper is intended in a preliminary way to make available to ethnologists the results of certain economic and social investigations in an important but hitherto neglected topic: the family group as a fundamental social unit among the hunting tribes of the northern woodlands. The idea has always prevailed, without bringing forth much criticism, that, in harmony with other primitive phenomena, the American Indians had little or no interest in the matter of claims and boundaries to the land which they inhabited. This notion has, in fact, been generally presupposed for all native tribes who have followed a hunting life, to accord with the common impression that a hunter has to range far, and wherever he may, to find game enough to support his family.

Whether or not the hunting peoples of other continents, or even of other parts of America, have definite concepts regarding individual or group ownership of territory, I should at least like to show that the Indian tribes of eastern and northern North America did have quite definite claims to their habitat. Moreover, as we shall see, these claims existed even within the family groups composing the tribal communities. There is, indeed, considerable significance in the fact that these tracts were remotely inherited in the families and that they were well known by definite bounds not only among the owners but among the neighboring groups. In many cases they were also associated with certain social clan groupings within the tribe. It would seem, then, that such features characterize actual ownership of territory.

One of the results of my ethnological explorations in the interests of the Geological Survey of Canada among the tribes of the northern and northeastern United States and Canada, has been to trace the

distribution of the family hunting claims and to study the social side of the institution, which is, to be sure, a fundamental one, among all the Algonkian people. Accordingly, I feel safe in presenting this preliminary report of the ethno-geographical material now, having pursued my objective studies through the tribes from the Atlantic seaboard in Newfoundland, Nova Scotia, Maine, the South Labrador coast, and provinces of Quebec and Ontario as far west as Mattagama river and north to Lake Abittibi beyond the Height of Land dividing the Arctic and St Lawrence watershed.

Before entering upon the specific material from different tribes, let me define the family hunting group as a kinship group composed of folks united by blood or marriage, having the right to hunt, trap, and fish in a certain inherited district bounded by some rivers, lakes, or other natural landmarks. These territories, as we shall call them, were, moreover, often known by certain local names identified with the family itself. The whole territory claimed by each tribe was subdivided into tracts owned from time immemorial by the same families and handed down from generation to generation. The almost exact bounds of these territories were known and recognized, and trespass, which, indeed, was of rare occurrence, was summarily punishable. These family groups or bands form the social units of most of the tribes, having not only the ties of kinship but a community of land and interests. In some tribes these bands have developed into clans with prescribed rules of marriage, some social taboos and totemic emblems. Such, then, is the general aspect of this institution.

Regarding the territorial bounds, I indeed found them so well established and definite that it has been possible to show on maps the exact tract of country claimed by each family group. The districts among the Algonkian seem to average between two and four hundred square miles to each family in the main habitat, while on the tribal frontiers they may average from two to four times as large. I have already prepared such maps of the Penobscot territory in Maine, the Montagnais and Mistassini of Quebec, the Timiskaming and Nipissing in Ontario, the Micmac of Nova Scotia and

Newfoundland, and the Lake Dumoine, Timagami, Matachewan and Mattawa bands of Algonkian and Ojibwa in Ontario and Quebec.[1] In only one instance so far in my investigations have I found this institution occurring among the Iroquois. In this case the Mohawk of the Oka band have a few family hunting territories, the idea evidently having been borrowed from the Algonkin occupying the same reserve. I could not find any traces of the institution among the Cherokee of North Carolina. Mr E. W. Hawkes informs me, concerning the Eskimo of Labrador, that, while aware that their Indian neighbors maintain the hunting territory system, they have not taken it up themselves.

In the west and north several authors refer in more or less definite terms to the institution. Harmon (1800) describes it among the Cree,[2] while now and then we can detect its occurrence in the regions covered by the reports of later ethnologists.[3] As might

[1] "Family Hunting Territories and Social Life of Various Algonkian Bands of the Ottawa Valley," *Memoir, Geological Survey of Canada* (in press).

[2] D. W. Harmon, *Journal of Voyages and Travels in the Interior of North America* (New York, 1903), p. 330–1.

"Every tribe has its particular tract of country; and this is divided again, among the several families, which compose the tribe. Rivers, lakes, and mountains, serve them as boundaries; and the limits of the territory which belongs to each family are as well known by the tribe, as the lines which separate farms are, by the farmers in the civilized world. The Indians who reside in the large plains, make no subdivisions of their territory; for the wealth of their country consists of buffaloes and wolves . . . But the case is otherwise with the inhabitants of the woody countries . . . should they destroy all these animals in one season, they would cut off their means of subsistence. A prudent Indian whose lands are not well stocked with animals, kills only what are absolutely necessary to procure such articles as he cannot well dispense with."

[3] V. Stefánsson, *Anthropological Papers, American Museum of Natural History*, XIV, part 1 (1914), p. 271. "Each group (Athapascan) then kept very strictly to their own hunting grounds and only in extreme need followed game into a neighbor's territory. . . ."

H. J. Spinden, "The Nez Percé Indians" *Memoirs American Anthropological Association*, II, p. 242. "The Nez Percé tribe was divided into bands upon the village or geographical basis. Each village had its chief, its fishing place and its strip of territory along the river."

Clark Wissler, "The Social Life of the Blackfoot Indians," *Anthropological Papers, American Museum of Natural History*, VII, part 1, p. 20. "When two or more bands chose to occupy immediate parts of the same valley, their camps are segregated and, if possible, separated by a brook, a point of highland, or other natural barrier. The scattering of bands during the winter was an economic necessity, a practice accentuated among the Thick-wood Cree and other similar tribes. Something was lost in defensive powers but this was doubtless fully offset by greater immunity from starvation."

indeed be expected, the tribes of the Plains area do not have the institution so far as I have learned incidentally from a few informants. From the allusions in literature, however, we might suspect its general distribution in the Plateau and in the northern or Mackenzie area.

We have reason to know, moreover, from early historical writings, that the typical institution of the hunting territory, with vested rights, so characteristic even today among the tribes of Canada, held sway among the Algonkian kindred as far south as southern New England. This brings the institution well within the limits of the region concerned in the treaty negotiations of our

Finally in this connection attention might be called to the significant passages in the works of R. H. Lowie on "The Northern Shoshone," *Anthropological Papers of the American Museum of Natural History*, II, part II, p. 208 and on "The Assiniboine"; in those of A. L. Kroeber on the Algonkian Gros Ventre, and in those of A. B. Skinner dealing with the northern Plains-Cree and Ojibwa. Cf. "Notes on the Eastern Cree and Northern Saulteaux" *Anthropological Papers of the American Museum of Natural History*, IX, part I, p. 150. "Every adult male Northern Saulteaux has a certain well-known range over which he has the exclusive right of trapping and hunting game, known as 'Tzikéwin' a word corresponding to home. This, by exception to the general rule of maternal inheritance, descends at his death to his nearest living relative, male or female in order of age. . . . The rules regarding the punishment for violation of the law against hunting on another man's lands are said to have been very strict at one time, but are now lax, although hard feelings and even blows frequently result from transgression."

Quite definitely, indeed, can we interpret the meaning of what Roger Williams wrote of the Narragansett in Rhode Island in 1643 in his quaint style, *Key into the Language of America*, Roger Williams (London, 1643).

P. 189. "Secondly, they hunt by Traps of severall sorts, to which purpose, after they have observed in spring time and summer the haunt of the Deere then about Harvest, they goe ten or twentie together, and sometimes more, and withall build up little hunting houses of barks and rushes, . . . and so each man takes his bounds of two, three or foure miles where he sets thirty, forty or fifty traps and baits his traps with that food the Deere loves and once in two days he walks his round to view his traps."

Further on, he remarks,

P. 193. "Pumpom: a tribute skin when a Deere is killed in the Water. This skin is carried to the Sachim or Prince within whose territory the Deere was slain."

Also, quoting *Good Newes from New England, Young's Chronicle of Plymouth*, pp. 361–2, cited in footnote in same edition, p. 193, Roger Williams Key, etc.

"Every Sachim knoweth how far the bounds and limits of his own country extendeth; and that is his own proper inheritance. . . . In this circuit whosoever hunteth, if they kill any venison, bring him his fee; which is the fore parts of the same, if it be killed on the land, but if in the water, then the skin thereof."

colonial government. Furthermore, on the assumption that the ethnically related Algonkian inhabiting southward into Virginia were organized similarly, we may have to conclude that all of the Atlantic coast tribes maintained the same institution.

Another feature of economic importance in the institution of the family hunting territory is the conservation of resources practised by the natives. In their own régime this means the conservation of the game. Let us consult, for example, the native regulations governing the treatment of the hunting territories among the northern Ojibwa and the Montagnais of the province of Quebec who are often accused of being improvident as regards the killing of game, notwithstanding the fact that they depend upon it for their living. The Montagnais subsist entirely upon the products of the hunt, trading the furs that they obtain during the winter for the necessities of life at the Hudson's Bay Company's posts. Accompanied by his family, the Montagnais hunter operates through a certain territory, known as his "hunting ground" (oti"tawin), the boundaries determined by a certain river, the drainage of some lake, or the alignment of some ridge. This is his family inheritance, handed down from his ancestors. Here in the same district his father hunted before him and here also his children will gain their living. Despite the continued killing in the tract each year the supply is always replenished by the animals allowed to breed there. There is nothing astonishing in this to the mind of the Indian because the killing is definitely regulated so that only the increase is consumed, enough stock being left each season to insure a supply for the succeeding year. In this manner the game is "farmed," so to speak, and the continued killing through centuries does not affect the stock fundamentally. It can readily be seen that the thoughtless slaughter of game in one season would spoil things for the next and soon bring the proprietor to famine.

The Montagnais depend largely upon the beaver, as there are very few moose and caribou in their country. The beaver to them is like the bison to the Plains Indians, or the reindeer to the Arctic tribes. The meat of the beaver is delicious and substantial and replaces pork very advantageously. If the hunter fall sick in the forest far from aid, he finds the castoreum a beneficial remedy. Different from the other beasts the beaver does not wander about and require to be hunted;

he builds his "cabin" in plain sight upon the very path of the hunter, in the river or lake. Instinctively, the hunter understands how to operate with a natural law, which no game commission can improve on, and to maintain the beaver there for his subsistence. He understands, moreover, that he cannot abuse his opportunity. Thus it is that the Indian, obeying a natural law of conservation, which is worth more than any written law to him, never destroys all the members of a beaver family. He knows enough to spare a sufficient number for the continuation of the family and the propagation of the colony. He takes care of the beaver as well as other animals, that live in his family territory, as a farmer does of his breeders. He can, indeed, tell at any time the number of animals which he can dispose of each year in his district without damaging his supply.[1]

The testimony of an Ojibwa chief at Lake Temagami, Ontario, is interesting because it gives us a first-hand translation of the actual statements of an Indian authority himself. Accordingly, I offer part of the speech of Chief Aleck Paul.

In the early times the Indians owned this land, where they lived, bounded by the lakes, rivers, and hills, or determined by a certain number of days' journey in this direction or that. Those tracts formed the hunting grounds owned and used by the different families. Wherever they went the Indians took care of the game animals, especially the beaver, just as the Government takes care of the land today. So these families of hunters would never think of damaging the abundance or the source of supply of the game, because that had come to them from their fathers and grandfathers and those behind them. It is, on the other hand, the white man who needs to be watched. He makes the forest fires, he goes through the woods and kills everything he can find, whether he needs its flesh or not, and then when all the animals in one section are killed he takes the train and goes to another where he can do the same.

We Indian families used to hunt in a certain section for beaver. We would only kill the small beaver and leave the old ones to keep breeding. Then when they got too old, they too would be killed, just as a farmer kills his pigs, preserving the stock for his supply of young. The beaver was the Indians' pork; the moose, his beef; the partridge, his chicken; and there was the caribou or red deer, that was his sheep. All these formed the stock on his family hunting ground, which would be parceled out among the sons when the owner died. He said to his sons, "You take this part; take care of this tract; see that it always produces enough." That was what my grandfather told us. His land was divided among two sons, my father and Pishabo (Tea Water), my uncle. We were to own this land so no other Indians could hunt on it. Other Indians could go there and travel through it, but could not go there to kill the beaver. Each family had its own district where it belonged, and owned the game. That was

[1] Quoting a statement prepared by the Montagnais of Lake St John.

each one's stock for food and clothes. If another Indian hunted on our territory we, the owners, could shoot him. This division of the land started in the beginning of time, and always remained unchanged. I remember about twenty years ago some Nipissing Indians came north to hunt on my father's land. He told them not to hunt beaver. "This is our land," he told them; "you can fish but must not touch the fur, as that is all we have to live on." Sometimes an owner would give permission for strangers to hunt for a certain time in a certain tract. This was often done for friends or when neighbors had had a poor season. Later the favor might be returned.

Having already given, in brief abstract form, the contents of some of my detailed reports, it may be well to continue in the same way by presenting condensed material showing the nature of the territorial institution among the various tribes embraced within the area of American and Canadian colonial movements.

Timiskaming Band of Algonkin

On the northern and eastern shores of Lake Timiskaming forming the inter-colonial boundary between Ontario and Quebec, are the Algonkin known as the Timiskaming band. These people seem to be a northern offshoot of the Algonkin of the Ottawa river. Many general features of the hunting territory system are repeated in the material coming from this group. There are seven original families in which the names are handed down by paternal descent. Here, as elsewhere, a common family hunting territory in which all the male members share the right of hunting and fishing, constitutes the main bond of union in the social life of the tribe. Hunting outside of the family territory was often punishable by death. More often, however, trespass was punished by conjuring against the offender's life or health. Each family, it seems, had some shaman in its ranks who could be called upon to work evil against intruders upon such occasions. Permission, nevertheless, was often given to hunt in neighboring territory; especially in times when the game supply might be impoverished, exchanges were made through courtesy. We find here rules for travelers in passing through strange territories. Permission was generally sought at the owner's headquarters before passing through his district and if, by necessity, game had been killed to sustain life the pelts were delivered to

the owners. Economically, these family territories in the Timiskaming band were regulated in a very wise and interesting manner. The game was kept account of quite closely, the proprietors knowing about how abundant each kind of animal was. Hence, they could regulate the killing so as not to deplete the stock. Beaver were made the object of the most careful "farming," an account being kept of the numbers of occupants old and young to each "cabin." In certain districts moose or caribou were protected during one year to give them a chance to increase after a period of hunting.

The totemic organization in the Timiskaming band is too decadent to furnish much material for study. There are the remains of three totems, the kingfisher, rattlesnake, and caribou. There is reason to suppose that these were introduced by intermarriage with the Timagami band. Nevertheless in this case, the family divisions are not primarily concerned with totemism. The main point here is that the hunting territory groups have developed by inheritance from individual proprietors irrespective of totemic groupings. No taboos of diet or killing are found in these family groups. They are purely social and economic. Some of the families forming the Timiskaming band originally came from the Matachewan band of Ojibwa, others have come from the Abittibi country, and others are derived from the Timagami. From our study in this group it is safe to conclude that the pressure on the Timiskaming territory has been constantly from the west, the result of the continuous northward and eastward drift of the Ojibwa from the region of Lake Huron and Superior. This study, besides giving us a definite boundary line for the Algonkin on the west, also provides us with a concrete and presumably accurate illustration of how territorial encroachments occur among the natives, accompanied by intermarriage and interchange of customs.

The Timiskaming people, too, have only in recent years come under the Dominion regulations, their land having been ceded in the usual way so that now only a few families retain the right to hunt at all times in their inherited districts. My investigations among the neighboring bands of Algonkin are not very extensive, but we may presume from the fact that to the southeast the Du-

moine river and Kipawa bands of the same group have the same social system that the whole Algonkin group was characterized by it. I found eight families forming these groups. Their territory extended as far east as Coulonge river which takes us fairly close to the country that is now settled, and where at first appearance one would hardly expect to find traces of aboriginal family claims. It may not be too futile to hope that in the further prosecution of these researches among the diffused remnants of the original owners, we may be able to plot out claims lying further to the south in what has been thickly settled country for some years.

Timagami Band

My best opportunity for investigating the social and economic organization was afforded by the Ojibwa of the Timagami band located at the Hudson's Bay Post on Bear island of Lake Timagami. In my survey of the region I followed the line of contact between the Algonkin, Ojibwa, and Cree from Lake Nipissing northward, obtaining data from three or four of the intervening bands. The Timagami people offered a rather attractive opportunity because they had maintained the hunting territory system up to the present, and this, together with the small size of the band, ninety-five souls, enabled me to plan inquiries on a number of points concerning the life of the individual and the social group in a fairly concrete way. The Timagami band is the offshoot of Ojibwa of the Great Lakes. Their present habitat is about Lake Timagami. There are fourteen families that form the group. As might be expected, the family hunting territory is of primary importance here as it is throughout the whole region occupied by the northern Algonkin hunting tribes. We find the general characteristics of this type represented here by family proprietorship in the districts, retaliation against trespass, conservation of animal resources, and certain regulations governing inheritance and marriage among the families. The districts of these family groups are fairly definite, bounded by lakes, rivers, ridges, and often groves of certain trees, being exceedingly well known and respected by all the hunters, under a very strong sense of proprietorship. The Timagami even went so far as to divide

their districts into quarters, each year the family hunting in a different quarter in rotation, leaving a tract in the center as a sort of bank not to be hunted over unless forced to do so by a shortage in the regular tract. These quarters were criss-crossed by blazed trails leading to the temporary camps. The Timagami called one of these territories *nda'k'im*, "my land".

While omitting the detailed discussion of other social phenomena a few words are needed to show how the clan system existed side by side with the hunting territorial system. Here there were four clans, the Loon, Kingfisher, Rattlesnake, and, of recent years, the Beaver, brought in by an immigrant family from Lake Nipissing. In these clans descent is reckoned through the father and the exogamic regulation prevails. They do not believe in descent from the totem, but it is regarded as a mark of identity to the members of the band. There is no association, outwardly, between the clans and the family bands. We infer, however, that the bands have increased by subdivision from the original founders who were members of three migrating clans. An examination of the territory as plotted on the map, which embraces a large area from Lake Nipissing to Height of Land, shows that these people are part of a northern and western movement of Ojibwa-speaking bands spreading from the Great Lakes to the newer hunting grounds which lie further from the territory now being despoiled of their game by encroaching settlements.

Still further information from the Ojibwa of Minnesota shows that essentially the same institution occurs among the bands there. From William Potter, *Pátigos*, of the Gull Lake band, I obtained a list of family hunting territories with boundaries marked on a map giving the proprietorships of certain districts on what is now the White Earth reserve. The territories here are relatively small compared to those in Canada, averaging about 100 square miles. The Minnesota family hunting claims include also the exclusive rights to the maple sugar bush and fishing waters lying within the boundaries of the tracts. On large open lakes the fishing is unrestricted. Trespass regulations are here also not at all strict. Courtesy even hardly requires travelers to secure permission from

the owners to hunt on their claims. In this particular part of Minnesota, however, the removal of other bands of Ojibwa since about 1870 to the White Earth reserve has had considerable effect upon the local institution, particularly in necessitating a redistribution in smaller parcels of the territories left among the Indians. An interesting fact is brought out by a comparison of the family territories here, which I learned of quite accidentally, and those of the Ontario Ojibwa. For it seems that many family and individual proprietary names are common to both areas, indicating that certain national family names occur throughout the Ojibwa. The same thing is manifested in the bands of the Algonkin. Comparison based on this class of material, much of which yet remains to be collected, may show whether these names are restricted to certain clans.

South of the St Lawrence, in the region east of that just dealt with, the country has been in the hands of the white man for many generations, yet some of the most interesting material is alive in the memory of the original Indian inhabitants. The Abenaki of St Francis, Canada, comprise the amalgamated fragments of the historic Wawenock, Norridgewock, Aroosaguntacook and other bands driven from southern Maine and New Hampshire in the eighteenth century. A visit to this village showed that some of the old family claims in the neighborhood of Moosehead lake, Maine, are still remembered. Although I am not ready to report in detail as yet, the Indians will soon have a map marked out for me showing the former territorial claims of their people.

Penobscot

In regard to the Penobscot who inhabit the Penobscot river valley in Maine, we encounter some interesting social and economic phenomena. In the old days their hunting territories, which are called *Nzi'bum*, "my river", bordered on the east those of the Aroosaguntacook, now the St Francis Abenaki, just mentioned. Almost all of the traditional twenty-two families of the tribe are still represented by descendants numbering something over four hundred. The usual rules against trespass, the usual habit of

spending the winter in the hunting grounds and gathering for the tribal rendezvous in the spring and fall, and the typical grouping of the family members into bands in which the territories were inherited, are all found here as elsewhere among the northern tribes. Passing from this common phase we find much more in the social aspect that is distinctive to the tribe.

To begin with, the human family groups were believed to be intimately related to certain land and sea animals, the relationship being accounted for by a myth of the transformer cycle of which an abstract will have to be given before proceeding further.

The mythical transformer, *Gluskα'be*, "The Deceiver", in the course of his career about the world, encounters a village of his people, as he calls them, who are dying of thirst occasioned by the cupidity of a monster frog-like creature (*Aŋglεbe'mu*, "Guards the water"). "The Deceiver" proceeds to the abode of this monster and orders him to disgorge the water which he is holding back from the world. Upon refusal "The Deceiver" kills the creature and fells a yellow birch tree upon him. The water released from the monster then flows down the branches and trunk of the tree and thenceforth becomes the Penobscot river system. The event that ensues is of importance to us. The people below who are dying of thirst at once rush to the water as it flows by. Some of them are so eager to drink that they plunge into the stream and are forthwith transformed into various fish, batrachians, and marine animals. Those who restrain themselves from the water escape transformation and become the ancestors of the human families. These, however, assume the names and to a certain extent the identity of the particular animal into which their nearest relatives were transformed. Furthermore, they seem to have chosen their habitat near the places inhabited by their animal relatives. So we find those families with marine animal associations occupying hunting territories near the sea. Moreover, these families subsisted largely upon the flesh of the animal with which they are associated. Certain physical peculiarities are also attributed to the mythical relationship between the present day human and animal families. To illustrate this, we find the Lobster and Crab families with territories

restricted to lower Penobscot bay, and the Sculpin and Sturgeon families further up along the river. The former were notable as seafaring people and subsisted chiefly upon sea food. The members of the Whale family are still looked upon as being very large and dark colored people. As regards the rest of the families having land animal associations, their origins are varied too much to be dealt with here. Some claimed descent from an ancestor who had lived with the associated animal, others through some pseudo-historical event concerned with the creature, while some others are thought merely to have taken an animal name from some particular species which abounded in their hunting territory.

Generalizing somewhat from my studies, which are treated in full in a work on the ethnology of the tribe, we find that the Penobscot families all had animal names, with descent in the male line. There were no taboos against killing the associated animal, which to a certain degree was depended upon for food. The term *ntú'tem* "my spouse's parents," or in another sense "my partner of a strange race," was frequently used in reference to the animal, which after all is to be classified in the category of a totem. The family totemic groups included those related by blood, by marriage, or by adoption. But no regular exogamy prevailed, because family identity was rather loose. The direction of marriage was largely arbitrary in the bands.

The following list gives the totemic names of the Penobscot families, in the order of their location from the coast inland: Lobster, Crab, Sculpin, Eel, Bear, Toad, Insect, Fisher, Whale, Beaver, Sturgeon, Wolf, Frog, Squirrel, Raccoon, Wolverine, Water Nymph (a human-like fairy), Otter, Lynx, Rabbit, Yellow Perch, and Raven. Those highest in social rank were the Bear and Squirrel from which the chief of the families having land animal totems was chosen, and the Frog and Sturgeon from which the other side chose their chief. In a certain sense the totems were regarded as family emblems. Pictorial representations of them were used to mark the boundaries of the hunting territories. The families had their totems blazed upon trees along boundary rivers or employed figures cut out of birchbark as line marks.

Resolving our data to what might seem to be a reasonable conclusion, it appears that the usual Algonkian family unit concept has in the case of the Penobscot been developed along some independent lines. Some special influences seem to have caused an emphasis of the economic aspect of totemism, which is here apparently of a secondary nature. A nascent clan organization seems to be in evidence. Nowhere else do we meet with quite the same thing. Finally it hardly seems necessary to add that the social structure of the Penobscot has been obsolete for about fifty years. The territories extended from the coast northward into the interior as far as the St John's river, those in the northern interior being of a much greater size than those nearer Moosehead lake, Penobscot river, and the coast. The latter average about five hundred square miles, while to the northeast they are often twice that extent. We might be tempted to infer from this that the Penobscot migration drifted southeast originally.

Regarding the Passamaquoddy of the eastern coast of Maine, my material, as yet incomplete, only permits me to state that the economic phenomena resemble those of the Penobscot. The Malecite of St John's river had their hunting territories too, but I am not prepared to give them yet. Here, however, we learn that personal nicknames were often derived from the animals most commonly hunted by individuals.

Micmac

Lastly, as regards the Micmac of the extreme east, inhabiting the maritime provinces of Canada, and Newfoundland, we find the data to be much less complex in character though no less fraught with ethnological importance. While my surveys in this region are as yet by no means complete, they already cover Newfoundland, Cape Breton island, and parts of Nova Scotia. The general characteristics of the family territories of the Micmac are fairly uniform, differing considerably from those of the Penobscot, despite the fact that both tribes belong to the same Algonkian subdivision.

The Micmac term their hunting territories *ntuγel·wâ̊mi*," hunting area." The districts themselves generally surround lakes, ponds, or

sections of rivers, few being at any distance from water. The bounds do not seem to be as strictly defined as among the Ojibwa, Montagnais, and Algonkin, nor does resentment against trespassing amount to much. In the old days the families ordinarily spent the summer in villages located near the seacoast, and retired in the fall to their proper hunting claims, where they had temporary camps at convenient intervals. There were no clans, no regulations of exogamy, and no group totemism. In this unelaborate social scheme we find even no remembrance of groupings of any kind under names. The immediate members of the family constitute the family group with its inherited hunting territory. These tracts, as a rule, remain intact as long as there are sons, grandsons, or nephews in the male line to hold them. Nevertheless, gradual changes are taking place as the districts may become subdivided in part among male heirs, and, as sometimes happens, they may be augmented by the addition of adjacent lots through intermarriage with other families or inheritance from distant relatives. Parts of territories are, again, occasionally bestowed as rewards upon friends for important services, such as supporting the aged or raising adopted children. The families themselves, as the simplest kind of social units, form villages which seem to have some individual identity under local names. These exist nowadays as reservations, constituting small bands. Related and neighboring smaller bands in turn comprise the larger bands, determined more or less by geographical features, known as the Micmac of Nova Scotia, New Brunswick, Prince Edward island, Cape Breton island, and Newfoundland, respectively. Each village has its chief and each band has its head chief while the whole nation is represented by a hereditary life chief whose headquarters are at Cape Breton.

I mention these political points showing the relationship of the different bands in order to introduce another relatively important problem of migration which our study of Micmac hunting territories throws some light upon. By comparing the size of the family hunting districts in the various divisions of the tribe we discover that the further eastward we go the larger the family tracts are. Those in Newfoundland, where there are thirteen family groups,

average about two thousand square miles to each, while in Cape Breton the sixteen family groups have an average of about four hundred square miles apiece, and in Nova Scotia the average district amounts to only about two hundred square miles. In its ultimate significance this comparison would seem to indicate that, in contiguous regions inhabited by branches of the same tribe, the country where the family territories are the largest is the country most recently occupied in the advancing frontier of the tribe. Hence, Nova Scotia was doubtless the center of distribution of the southern and eastern Micmac whose line of migration has been continuously eastward, reaching Newfoundland within the last two hundred and fifty years by approximate estimate. This inference is also supported by ethnological and historical material, obtained from the bands themselves, which I have treated in a more special article,[1] and from which I have quoted a little here.

Conclusion

A still more important conclusion may, I believe, be drawn from this material, incomplete as it is yet. It confirms the idea that the earliest fundamental social unit of the Algonkian was the consanguineous family. In the north and east under fairly isolated conditions the family unit has remained most characteristic, but among the central and southern divisions of the stock a borrowed clan system has been superimposed upon the simpler family grouping. This seems to offer an explanation for the existence of the more complex clan and totemic organization found among the Algonkian adjacent to the Iroquois and other more typically southern phases of culture where the clan system predominates. Moreover the uninterrupted prevalence of the family unit and the corresponding absence of the clan system among most of the tribes inhabiting the lateral zone just north of the Great Lakes and the St Lawrence is a very strong indication favoring the supposition that this general region may conservatively be considered the home of Algonkian institutions whether or not it be an old center of distribution of the stock. The absence of definite clans, the family social group or

[1] "Family Hunting Territories of the Micmac-Montagnais of Newfoundland," *MS. in press, Geological Survey of Canada.*

band, and the lineal system of relationship seem to go together in the same stage of nomadic hunting culture and to be fundamentally typical of an old Algonkian social period, which has survived with fewer modifications among the tribes of the northern and northeastern group.

I hope later to extend the region covered by my territorial survey so that as many as possible of the contiguous boundaries of all the northern and northeastern tribes may be marked down. Then we shall be able to give actual boundaries not only to tribal groups but to dialects and to the distribution of elements of culture. This material, may, moreover, prove to have some value in the field of Indian administration should it ever be possible to reconstruct the boundaries of the Indian family claims in Ontario and Quebec. It becomes apparent by means of our study how, through misunderstanding between the colonial authorities and the natives, large tracts of land were sold by chiefs or by individuals who, from the Indian standpoint, had absolutely no claim to their ownership nor rights of disposal. We have also found out how this topic of ethnology, recently brought to light as a field of research, may enable us to trace the trend of migration in certain groups of American culture, besides furnishing us with material illustrating the gradation in social complexity from the simplest family kinship group to the totemic clan groups within the same stock. It is to be hoped that in the future ethnologists working in the field will enter this topic upon their programs of investigation.

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SOUTHERN PAIUTE AND NAHUATL—A STUDY IN UTO-AZTEKAN. PART II (CONCLUDED)

By EDWARD SAPIR

Uto-Aztekan kw

UTO-Aztekan *kw* remains as such in Shoshonean and Nahuatl (written *qu* and *cu*), also generally in Sonoran; in Papago, however, it regularly becomes *p* (Uto-Aztekan *p*, as we have seen, becomes *v* or *w* in Papago). This Papago *p* is probably to be understood as *b*, as, according to Dr Mason, it appears in Tepecano as *b* (intermediate *p* when final). Examples of *kw* initially are:

N. *qua* "to eat"; Cora *kwa;* Tar. *koa* (probably = *kwa*); Pap. *pah* "to swallow": Git. *-kwa* "to eat"; Fern. *gwa;* Gabr. *kwa-a;* A. C. *qwaa*

N. *quāuh-tli* "eagle"; Cora *kuólreabe* "Adler" (*kuo-* < **kwa-*); Tepecano *ba'āG* "eagle"[1]: Hopi *kwa-hö* "eagle"; S. P. *qwān'á-nts'* "eagle"; Ser. (H.) *qwa-l^{y}, gwaa-tš* "condor"; Cahu. *qwaa-l* "hawk (sp.)." Uto-Aztekan **kwā-* or **kwa'ā-*

N. *cui* (i. e. *kwi*) "to take"; Pap. *pūɪ* "to take (sing. object)" (< **kwei*); Tepecano *bī*, preterit *bīi*[1]: S. P. *qwīī-* "to take, pick up (sing. object)" (assimilated from **kwīi*).[2] Compounded with N. *cui* is *cecui* "avoir, prendre froid," with which is doubtless to be directly compared Pap. *hūhpih* "to become cold" (< **sekwi;* **kwīi* when used absolutely, **-kwi* in compounds)

N. *cuiloni* "sodomite": S. P. *k'^{wi}'^{i}tú-mp'^{i}* "anus" = *kwit'u-*

N. *cuitla-tl* "excrement"; Cora *tšuita* "Excremente von Menschen und Tieren" (< **kwita;* **kwi-* > *tšwi-*, cf. **ki-* > *tši-*); Pap. *pīkɪ* "manure" (< **kwita*); Tepecano *bīt*, preterit *bīn* "to defecate"[1]: S. P. *qwitša-* "to defecate" (< **kwita-*)

Cora *kwasi* "der Schwanz der Tiere"; Pap. *pahhɪ* "tail" (< **kwas'i*); Tepecano *bāī*[1]: S. P. *q'^{wa}'si-ϕ^{i}* "tail" < *kwas'i-;* Cahu. *suwet he-qwasqa* "star its-tail, comet"

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[1] On Dr Mason's authority.

[2] This etymology is certain. My previous comparison of N. *cui* (misunderstood as phonetically *kui*) with S. P. *-qoi-* "to take off " (see p. 395 of Part 1) is to be discarded.

In some cases Uto-Aztekan *kwa* (*kua*) seems to vary with *ko* (*ku*):

N. *quāi-tl* "head" (in compounds *quā-*); Cora *ki-poá* "hair" (lit., "head-hair"; *ki-* < *ku-*); Tep. *ku-pa* "hair"; Pima *ko-pats* "hair": Tüb. *ko'o-* "head"; Git. *-go-po* "hair"

N. *quahui-tl* "wood, tree, stick"; Cora *kiyé(ri)* "Baum, Pfahl" (< **kuye-*); Huich. *kouhie* (= *kuye*) "bâton"; Tep. *kwawi* "wood"; Pima *kwak* (quoted from Kroeber), *kokaki* (given by Russel); Pap. *ku'A* "to get wood"; Tepecano *kua'G* "wood, to gather wood"[1]: Hopi *ko-ho* "wood"; S. P. *q'ʷᵊqwa-p'ᵊi* (= *kuk'wa-*). Pap. *ku'A* and Tepecano *kua'-G* make it extremely likely that where *kwa-* occurs in these words we are dealing with original Uto-Aztekan **kua-* or **ku'a-*. This is remarkably confirmed by both Nahuatl and Southern Paiute. Original **kwawi-tli* (with accentual scheme ′ ˋ ′, see Part I) would have become N. **kwawᵊ-tli* (in Spanish orthography **quăuh-tli*, not to be confused with *quāuh-tli* "eagle"); original **kuawi-tli*, **ku'awi-tli* (with accentual scheme ′ ˋ ˊ ˋ). had to develop to **kuawi-tl* (*-a-* could not become syncopated before *w*) whence, *u* losing its vocalic value, *kwawi-tl* (in Spanish orthography *quahui-tl*). Hence N. *quahui-tl* is only apparently opposed to our law of alternating stressed morae (see Part I, p. 419). As for Southern Paiute, original **kwa-* would have reduplicated to **kwak'wa-* (> S. P. **q'ʷᵊq'ʷᵊqwa-*), while *kuk'wa-* < **kuk'ua-* is perfectly intelligible

Original *kui* has given rise to *kwi* in both Southern Paiute and Papago (where it further developed to *pi* > *p'*) in:

Cora *kitsi* "Rauch" (< **kutsi*); Huich. *koutzi* "fumée" (i. e. *kutsi*); Pap. *kuPS* "smoke" (< **kuPIS* < **kukwi-ts* < **kuku(h)i-*, see Mono (N. F.) below): Mono (N. F.) *gukuhi-p* "smoke"; Wob. *gugui-p;* S. P. *kwĭk'ᵘaKᵘ* (< **kui-* < **kuhi-;* note that value of two morae of original disyllabic **kui-* is preserved in S. P. *kwī-* by lengthening *i* to *ī*)

Uto-Aztekan s

Both *s* and *š* occur in Nahuatl, but I think it very likely that N. *š* (written *x*), aside from those cases where it can be shown to have developed from unvoiced *y* or *i* or from *s* originally followed by *i*-timbre,[2] always goes back to original *s*. In Southern Paiute, and other Shoshonean dialects, *s* and *š* are also to be kept apart, but here again I believe it likely that it will be ultimately possible to show them to have developed from one sibilant (in Southern Paiute *s* seems to stand regularly before *i* and *ɔ; š* before *ĭ* and *o;* both *s*

[1] On Dr Mason's authority.

[2] See Part I, pp. 417, 418.

and š before *a*, though *s* seems more typical). It is doubtless significant that N. *s* (written *c*, before *e* and *i*, and *z*, *ç*) corresponds to both S. P. *s* and š and that N. š (*x*) may correspond to S. P. *s*. It is further important to observe that Pap. has *h* or zero corresponding to both *s* and š of Nahuatl and Southern Paiute. All this points to only one Uto-Aztekan sibilant (here assumed to be *s*) which in various dialects must have developed to š under appropriate phonetic circumstances.

Examples of Shoshonean initial *s* corresponding to Nahuatl *s* are:

N. *çali-ui* "s'attacher, adhérer à une chose," *çali-ui-ni* "gluant, visqueux": S. P. *san'á-p'*[1] "gum"

N. *çolō-ni* "couler avec fracas, en parlant d'un torrent": S. P. *sōa-n'ia-* "to make a sound as of flowing water"

N. *çoqui-tl* "fange": S. P. *soγo-* "mud" (with open *o;* probably to be understood as *sɔγɔ-*)

Pap. *hah* "to melt, thaw" (< **sā-*): S. P. *sā-* "to melt," *sa'ai-t'ui-* "to cause to melt"

N. *izta-tl* "salt," *izta-c* "white" (lit. "salt-colored"): Cahu. *seta-xa-t* "salty"

N. *çaca-tl* "paille, herbe, jonc": Cahu. *saxa-t* "willow"; Ser. (H.) *haka-t* "willow" (in all Serrano dialects Shoshonean *s*, š regularly appears as *h* or *x;* cf. Papago)

Examples of Nahuatl (or Sonoran) initial *s* corresponding to Shoshonean š (*s*) are:

N. *çan* "only, but": S. P. *-šampa-* "only, except"

N. *ce, ce(n)-* "one"; Huich. *che-oui* (i. e. *šĕ-wi*); Cora *se-* (according to Kroeber's data; Preuss gives *saį* "ein," cf. probably also *sen* "sicherlich"); Cah. *senu-;* Tepecano *hīma-t*[1] (< **sema-*): S. P. *šû-* "one (perhaps < **šuu-* < **šunu-* < **šīnu-;* cf. Cah. *senu-*); Hopi *syu-xke;* Mono (N. F.) *šimu;* Mono (In.) *šiwi;* Tüb. *išü-ts* (< **sī-* ?); Luis. *su-pul;* S. J. C. *se-pul.* Compare also N. *ce(n-)* "entièrement": S. P. *šû-* "entirely, well" as verb prefix

N. *cea, ceya, cia* "vouloir"; Tepecano *hɔhi* "to desire" (< **sɔhi*): S. P. *-šuya-, -šia-* (probably = *-šĭya-*, cf. N. *ceya*) in *-γû-p'U-šuya-γwa-n'oa-* compound modal suffix "would that! I wish (he) had (done so and so) *or* would (do so and so)!" (*-γû-* irrealis; *-p'U-* probably perfective; *-γwa-* probably tense-modal element; *-n'oa-* modal element difficult to define; *-šuya-* is left to be assigned desiderative value)

N. *izte-tl* "nail" (< **sute-*); Cora *šité;* Cah. *sutu;* Pap. *hūTŠI* (< **suti*): S. P. *šitšu-* "nail" (< **šitu-*); Shik. *-šidu;* Tüb. *sulu-;* Gabr. *estšu-;* A. C. *-šul'u* (< **šul'u-*); Cahu. *sal'u*

[1] On Dr Mason's authority.

N. *ce-tl* "glace," *ce-cui* "avoir, prendre froid," *ceui* "se refroidir"; Cora *sẽ* "es ist kalt"; Huich. *je-ri* "froid"; Pap. *hü-* (< **se-*) in *hühpih* "to become cold," *hüuɪ* "to be cold," *hüva'ɪ˜ɪ* "to become cool": S. P. *šï-* in *šï-p'a-y'a-* "to feel cold" (lit. "to die, *-y'a-*, of cold"; *šï-p'a-* probably identical with Pap. *hü-va-*), *šï-p'Ura-* "to be cold (e. g. ice)," *šï-t'u-* "to be cold weather"

N. *cihuā-tl* "woman" (*çoua-tl* is given by Siméon as "forme rare"): S. J. C. *šoŋwā-l* "woman"; Luis. *šuŋa-l*

N. *cī-tlalin* "star," *xīhuī-tl* "comet" (perhaps dissimilated from **sūwi-* or **šūwi-;* cf. *cihua-tl: çoua-tl* above); Cora *šureabe, šuruabe* "Stern"; Huich. *šulawi* "star"; Tepecano *hūva*[1]: Hopi *so-hō* "star"; Tüb. *šu-l;* Git. *hùu-tᵘ* (< **sū-*); Luis. *šuu-la*

Tar. *sula* "heart"; Tep. *hura* (< **sula*): Tüb. *šuuna-* "heart"; Git. *-xùn* (< **sūna-*); Fern. *-hùn* (< **sūna-*); A. C. *-šun;* Cahu. *-sun*

Examples of postvocalic Uto-Aztekan (Nahuatl) *s:* Shoshonean *-s-*, S. P. *-s'-*, *-š'-* are:

N. *aci* "atteindre avec la main, parvenir en un lieu"; Cora *as* "ankommen, anhalten," *asi* "angetroffen werden, sich finden"; Pap. *aɪ* (< **ahi* < **asi*) "to reach, overtake, pass": S. P. *'ᵊ'siā-* 'surface, outer covering' < *as'iā-* (?)

Cora *kwasí* "der Schwanz der Tiere"; Pap. *pahhɪ* "tail" (< **kwas'i*): S. P. *q'ʷᵊ'sí-ɸᵊ* "tail" (< **kwas'i-pi*)

Cora *has* 'älterer Bruder": Cahu. *pas* "elder brother" (cf., with *-tš-*, N. *āch-tli* "frère aîné")

N. *tiça-tl* "terre ou poudre blanche," *tice-uac, tice-ctic* "blanc"; Pima *tâhai* "white" (< **tɔsa-*); Huich. *toja, tousa* "blanc"; Cah. *tosa-li:* S. P. *tɔš'a-* "white"

N. *teci* "moudre le mais ou autre chose sous la pierre"; Cora *tiíše* "mahlen"; Pap. *tšuɪ* "to grind" (< **tuhi* < **tusi*): S. P. *tuš'u-* "to grind seeds"

N. *nēci* "to appear": S. P. *naš'ï-m'i* "to seem, appear"

Examples of N. (Sonoran) *š* corresponding to Shoshonean *s* are:

N. *xal-li* "sable, pierre qui se met en poudre"; Cora *se* "sand," *sā-ta* "auf dem Sande, sandiger Ort" (*se* and *sā-* may point to original stem **sea-*, cf. Cora *āka* "Wind": Huich. reduplicated *heheaca* "air"; this **sea-* or parallel **sia-* may lie back of N. *xal* < **sᵘal-*): S. P. *siŋwa-mpU-* "sand, gravel" (< **siwa-*). How Nahuatl-Cora **sea-*, **sia-* is related to S. P. **siwa-* is not clear

N. *xix-tli* "excrément de l'homme," *ā-xix-tli* "urine" (< **siš-* < **sisᵘ-* < **sisi-;* *šiš-* may here be due to assimilation of *s-* to *-š-*); Pap. *hi'ɪ* "urine" (< **si'i*): S. P. *si'i-* "to urinate"

[1] On Dr Mason's authority. Dr Mason points out that Tep. *sia-vok*, given in Part I as cognate, must be rejected, as Uto-Aztekan *s* > Tep. *h*.

Huich. *schoure* "rouge" (i. e. *sŭ-re*); Cora *ta-ja-ri* "rouge" (Diguet), *ta-ša, ta-ša-ra, ta-ša-vin* "rot, rot-gelb" (Preuss); Tep. *souhe* "rouge" (i. e. *su-he*): Cahu. *sel-nekiš* "red" (Cahu. and A. C. *-nekiš, -nikiš* are suffixes for color terms; *se-l-* with suffixed *-l*, cf. A. C. *tu-l-nikiš* "black" and Cahu. *dewi-š-nikiš* "white"). Huich. *šu-*, Cora *ša-*, Tep. *su-*, Cahu. *se-* may point to Uto-Aztekan **sɔ-*, **se-* (cf. doubtless also Pap. *hühT* "red face paint" < **se-*)

Uto-Aztekan (or Nahuatl-Sonoran) *s* corresponds to Shoshonean *tš* in:

N. *poça-ua* "s'enfler," *poça-li* "manger avec excès"; Cora *huša, hušai* "gesättigt sein": S. P. *p'ʷ'tša-* "to be filled up" = *put'ša-*

N. *ez-tli* "sang," *eço-tl* "sang de l'homme": Ser. (H.) *-itš* "blood"; Git. *-ödj.* These Serrano forms probably point to Shoshonean **ītš(o)-*. It is difficult to separate from Uto-Aztekan **eso-*, **etšo-* "blood" certain Luiseño-Cahuilla and Hopi forms: Cahu. *ewu-l* "blood," *-ewˀ* "blood of a person," *ewˀi-l* "much blood"; A. C. *-owˀ* "blood"; S. J. C. *-ou;* Luis. *-ou;* Hopi *ŭ.nwe.* These forms seem to point to Shoshonean **īwo-* or, with voiceless *w*, **īwo-;* how this is related to **īso-*, **ītšo-* is not easy to see.

So far all Southern Paiute reflexes of Uto-Aztekan *s* have been seen to be some form of sibilant (*s-*, *š-; -s'-*, *-š'-*; *-tš-*). There are, however, a number of clear cases in which Uto-Aztekan postvocalic *s* is represented in Southern Paiute by ' (glottal stop). We may consider this glottal stop as developed from non-geminated postvocalic *s* (all cases of S. P. postvocalic *s* or *š*, as we have already seen, are geminated). Whether S. P. is here directly equivalent to Pap. zero (which sometimes appears as representative, instead of *h* or *hh*, of Uto-Aztekan postvocalic *s*) is difficult to say at present, though it does not seem likely (cf., e. g., Pap. *tšuɪ* "to grind" < **tusi:* S. P. *tuš'u-* with Pap. *wuɪ* "eye" < **pusi:* S. P. *pu'i-*). Examples of Uto-Aztekan *-s-*: S. P. ' are:

N. *ix-tli* "oeil" (< **isi-* < **pusi-*); Cora *hísi* "eyes" (< **pusi*); Tep. *buy* (i. e. *bui*); Pap. *wuɪ;* Tar. *pusi-;* Cah. *pusi-:* S. P. *pu'i-ɸ*[1] "eye"; Shik. *-bui;* Mono *-buš;* Tüb. *puntsi-;* Luis. *-puš;* Hopi *bōʷsi.* Uto-Aztekan **pusi-*

N. *cocki* "to sleep"; Tep. *kosi;* Cora *kutsu;* Pap. *koɪ;* Tepecano *koc*, preterit *koiˀ:* S. P. *qɔ'ɔi-* "to go to sleep (plur.)" (< **kɔsi-*). Uto-Aztekan **kɔtši-*, **kɔsi-*

[1] On Dr Mason's authority.

N. *uetzi* "to fall"; Tepecano *gīš* "to fall in the water" (< **wetši*), preterit *gīᵘ*: S. P. *wï'ï-* "to fall" (< **wïsï-*, assimilated from **wïsi-*). Uto-Aztekan **wetši-*, **wesi-*

Pap. *vihhʌ* "penis" (if from Uto-Aztekan **wisa-* and not **pisa-*): S. P. *wï'á-p'ᵘᵢ* "penis" (* < *wïsa-* ?)

N. *xix-tli* "excrement" (< **sisi-*); Pap. *hi'ɪ* "to urinate" (dissimilated from **hii-* or **hihi-* ?): S. P. *si'i-* "to urinate"

Another example of S. P. '<-*s-* is afforded within Soshonean itself:

Cahu. *gwaši-š* "ash": S. P. *qwɔ'á-t'ᵘᵢ'qa-* "to smoke" (lit., "to eat *qwɔ'a-* = ashes ?") (< **kwɔsa-*)

Uto-Aztekan m

Uto-Aztekan *m* appears as such in Nahuatl (where, however, it becomes *-n* when final; also assimilated to *n* before *t*, *tl*, *ch*, *tz* and to *η*, written *n*, before *k* and *kw*), Sonoran, and Shoshonean. Examples of initial Uto-Aztekan *m* are:

N. *mon-tli* "son-in-law"; Cora *mu* "Schwieger (-vater, -mutter, -sohn, -tochter)," *muna-ra* "Schwiegervater": S. P. *mon'a-tsi-* "son-in-law"

N. *metz-tli* "moon"; Huich. *metza* "lune"; Cora *matsa-* (from Kroeber), *máš-kirai* "mond" (Preuss); Tar. *metša;* Pap. *mahsa'ᴛ*: Hopi *moya-wo* "moon"; Tüb. *müya-l;* Git. *müa-tᵛ;* Fern. *moā-t;* Luis. *moi-la;* Cahu. *meni-l;* S. P. *mʊa-;* Mono (In.) *müa-ts*

N. *metla-tl* "metate"; Huich. *mata;* Pap. *mah'tšuhᴛ:* S. P. *mará-ts'* "grinding stone"; Luis. *mala-l*

N. *māi-tl* "hand" (*no-mā* "my hand," *mā-* verb prefix "with the hand"); Huich. *mama;* Cora *moá-ka* "Hand" (Kroeber quotes *moa-ma*); Tar. *ma-;* Cah. *mama;* Tep. *ma-;* Pima *ma-:* S. P. *mɔ'ɔ-ɸᵢ* "hand," *ma-* verb prefix "with the hand" (*mɔ'ɔ-* assimilated from **mɔ'a-*, cf. Cora *moa-* ?); Shik. *moo;* Mono (In.) *-maia;* Hopi *maa-t;* Tüb. *ma-*; Git. *-ma;* Fern. *-ma;* Luis. *-ma;* Cahu. *-mo.* It is not clear how S. P. *mɔ'ɔ-* is related to S. P. *ma-*

N. *maca* "to give"; Cah. *maka;* Tep. *maxe;* Pima *maka;* Pap. *mah* (< **maka*): S. P. *maγa-* "to give"; Mono (In.) *maki;* Bank. *maha;* Git. *a-mak;* Fern. *maxa;* Cahu. *maxa*

N. *mimiloa* "renverser, faire rouler une chose": S. P. *miŋqwā-* "(frightened animals) come out in one bunch"

N. *min-tonili* "arrière-petit-fils, -petite-fille": S. P. *mia'-* "small, tiny"

Cora *ma, ma-n* "hier, dort," *ma-ka, ma-kan* "dort," *má-na má-naka*; Huich. *ma-na* "ici": S. P. *ma-* demonstrative stem "that (visible)"

Pap. *maɪ* "to learn, know": S. P. *mai-* "to find, discover"

N. *miec* "much"; Pima *moi* "many": Luis. *muyuk* "much"

Cora *mù* "Kopf," *mouhou* (Diguet) "tête" (i. e. *mu'u*); Huich. *moho* "tête"; Tar. *mo-* "head"; Pima *mo-* (from Kroeber), *mâû-ka* (Russell); Tep. *mo-* (from Kroeber), *mahou* (Diguet) = *ma'u;* Pap. *mo'o:* Tüb. *tso-m'o* "hair." Uto-Aztekan **mɔ'ɔ-*

Postvocalic Uto-Aztekan *m* appears in Southern Paiute either geminated as *-m'-* or spirantized as *-ŋw-* (in Ute *-ŋw-* generally appears as *-w-* with nasalization of preceding vowel). Examples of elements appearing in both forms are:

N. *-mê* plural suffix (shortened to *-n* in *i-n* "these"; *o-n* "those"; *-qui-n* "them," plural form of *-c-*, *-qui-* "him, it"; *-ti-n*, plural suffix): S. P. *-m'v-* = *-m'ï-* (< **-m'e*), *-ŋwv-* (< **-me*), animate plural suffixes (e. g. *'i-m'v-* "these," *'u-m'v-* "those," *'aya-m'v-* "turtles"; *nïŋwv-ŋwv-* "persons")

N. *amo-* "your (plur.)," *amè-huān*(tin) "you (plur.)," *an-* "you (plur.)," as proclitic to verb form (< **ame-*); Tepecano *am-* "your (plur.); you (plur. obj.)"[1]: S. P. *m=vm'i-* "you (plur.)" as absolute form (*-m'i-* suffixed element, cf. *nï-m'i-* "we exclusive;" *m=v-*, with its peculiar labialized *m*, doubtless goes back to **ïm'ï*, as shown also by cognate forms in other Shoshonean dialects), *-'...ŋwvm'i-*, *-'...ŋum'i-* "your, you (plur.)" possessive and objective suffix, *-'...ŋwv-* "you (plur.)" subjective suffix (< **-' me*); Git. *ümü* "you (plur.)"; Ser. (H.) *üma-m;* Cahu. *eme-m;* Luis. *omo-m;* Hopi *ömaa*

Examples of S. P. geminated *-m'-* are:

N. *mo-* "thy," *mi-tz* "thee, to thee"; Cora *múa* "du": S. P. *-'...m'i-* "thy, thee" possessive and objective suffix, *im'i-* "thou" as absolute form (< **ïm'i-*, cf. Ute *ïm=i-*); Tüb. *-ŋ* "thy," *umbi* "thou"; Ser. (H.) *mö-* "thy"; Fern. *mu-*, *mo-* "thy," *umü* "thou"; Luis. *om* "thou"; Hopi *öm* "thou." How these Shoshonean forms with nasal are related to forms without nasal (S. J. C. *o-* "thy"; A. C. *o'o* "thou"; Cahu. *e'e-* "thy," *e* "thou"; Mono (N. F.) *ü* "thou"; Shik. *ü*) is not clear. Apparently Shoshonean possessed two etymologically distinct elements: **mo-* "thy" (cf. N. *mo-*), **mi-* or **-mi* "thy; thee" (cf. N. *mi-tz*); and **ï* -or **ï'ï-* "thou" (morphologically, not etymologically, parallel to N. *ti-* "thou"). Forms like Luis. *om*, S. P. *im'i-*, Git. *ümü*, used as absolute forms for "thou," would then be compounded of subjective **ï-* and possessive-objective **-mi.*

N. *toma* "to loosen, untie, open, deliver, set free": S. P. *tu'um'a-* "to pick up several things," *tûŋwai-* "to pick up what has been rejected" (< **tômai-*) (?)

Examples of S. P. spirantized *-ŋw-* < *-m-* are:

N. *tlan-tli* "tooth" (< **tlame-*); Huich. *tame;* Cora *tame;* Tar. *teme-;* Cah. *tami;* Tep. *-tamo:* S. P. *taŋwá-mp'ï* "tooth" (< **tama-*); Mono

[1] Quoted on Dr Mason's authority.

(In.) *-tawa* (*-w-* < *-m-*, as in S. P.); Shik. *-dawa;* Tüb. *dama-;* Git. *-dama;* Fern. *-tama;* Luis. *-tma* "mouth"; Hopi *tama* "tooth"

N. *tema* "mettre, déposer quelque chose en un lieu, remplir une chose de semence ou de terre": S. P. *tiŋwa-* "to cover up, close up (hole)" (< **tīma-*)

N. *nemi* "to live": S. P. *nïŋwu-* "person" (< **nïmï-*); Ute *nuwi-* (<**nïmï-*); Mono (N. F.) *nüm;* Shoshone *nï*^{u} (i. e. *nïw*)

N. *nema* "pied à pied, pas à pas": S. P. *naŋwa-* "track" (< **nama-*)

N. *miqui* "to die": S. P. *tša-ŋwuk'i-* "to die off" (< **-mïk'i-*)

Huich. *tamejh* "nous"; Cora *ïtan* "wir" (*-n* < *-m-*); Tar. *tame* "we"; Cah. *ítom;* Tep. *atem:* S. P. *taŋwa-* "we" (< **tama-*); Shik. *ūdiŋwa;* Git. *itsam;* Luis. *tšam;* Cahu. *tšeme-m;* Hopi *ītamö*

Cora *hemi, hemí-n* "vor, bei, in, zwischen, unter" (< **pemi* ?) post-positive element: S. P. *-vaŋwi-* "in" (< **-pami-*)

Uto-Aztekan n

Uto-Aztekan *n* is normally represented as such in Nahuatl (assimilated to *ŋ*, written *n*, before *k* and *kw*), Sonoran, and Shoshonean. Examples of initial Uto-Aztekan *n* are:

N. *nè(huātl)* "I"; Cora *ne, ni, na, nu* "ich"; Huich. *ne:* S. P. *nï'* "I"; Mono (N. F.) *nü;* Tub. *nü-gi;* Git. *nü;* Fern. *nv-mü;* Luis. *no;* Cahu. *ne;* Hopi *no*

N. *nene-pilli* "tongue"; Cora *nanu;* Huich. *nene;* Tar. *neni-;* Cah. *nini;* Tep. *nunu:* Git. *-nōŋi;* Gabr. *-noŋi-;* Cahu. *-naŋ.* This *n-* appears dissimilated to *l-* in Hopi *leŋi;* Tüb. *lala-*

N. *neci* "to appear": S. P. *naš'ï-m'i-* "to seem, appear"

N. *nema* "pas à pas": S. P. *naŋwa-* "track"

N. *nèmi* "to live": S. P. *nïŋwu-* "person," *nïŋwu'a-* "body"

N. *ne-* reflexive prefix: S. P. *na-* reflexive prefix. This element is probably identical with reciprocal *na-* (of quasi-dual significance) in N. *na-hui* "four"; Huich. *na-u-ka* (from Kroeber), *na-o-ba* (Diguet); Tar. *na-kuo;* Cah. *na-ki:* Hopi *na-leyi* "four" (cf. *leiyi* "two"; similarly N. *-hui,* i. e. *-wi,* and Huich. *-u-, -o-* are etymologically identical with N. *o-* of *o-me* "two," S. P. *wū-*, Tüb. *wo,* Cahu. *wi*), *na-vai* "six" (cf. *pakio* "three"), *na-nal* "eight" (cf. *naleyi* "four"); S. P. *na-vai-* "six" (cf. *pai-* "three")

N. *nacaz-tli* "ear": S. P. *naŋqá-va-φ'* "ear"

N. *noloa* "plier, courber une chose"; Pap. *noh* "to bend": S. P. *nɔq'ɔ-m'i-* "to bend"

N. *non-qua* "à part": S. P. *nan'ɔ-ɨ'u-* "by oneself"

N. *noquia* "répandre une chose," *noqui-ni* "couler (en parlant d'un liquide)": S. P. *nuq'i-* "to stream, run"

Postvocalic Uto-Aztekan *n* appears in Southern Paiute either as

geminated *-n'-* or, when originally ungeminated, disappears entirely (cf. *-s'-* and *-'-* as postvocalic forms of Uto-Aztekan *-s-*). Doubtless *-n-* first left its trace as nasalization of preceding vowel, this nasalization itself later disappearing (Uto-Aztekan *-ana-* > *-ąa-* > *-aa-* is quite parallel in development to *-ama-* > *-aŋwa-* > *ąwa-* > *awa-*, e. g., Hopi *dama* "tooth": S. P. *taŋwa-*: Ute *tąwa-*: Mono *-tawa*).

Examples of geminated *-n'-* are:

N. *mon-tli* "son-in-law"; Cora *muna-ra* "Schwiegervater": S. P. *mon'áts* "son-in-law"

N. *pani* "en haut, au sommet": S. P. *pa'a-n'i-* "to be high," *pa'ánt*[1] "high"

N. *-pan* "upon"; Cora *ha-poa(n)* "auf, in, über": S. P. *-va'an*[1] "on, upon"

N. *-nal-co* "de l'autre côté": S. P. *-n'aŋgwa-* "from (beyond)"

N. *ni-, n-* "I," *no-* "my": S. P. *-n'i-* "I; my, me;" Tüb. *-n* "my"; Cahu. *ne-;* Fern. *ne-, ni-*

Cora *vene* "schlagen" (cf. *ve* "schlagen, werfen, schiessen, treffen"): S. P. *wvn'ai-* "to throw down"

Pap. *nūhNI* "to fly up, fly away (plur)"; Cora *éni-te* "fliegen, flattern": S. P. *nɔntsi-* "to fly" (syncopated and palatalized from **nɔn'i-ti-*); Ser. (H.) *hinyi-k*

Examples of S. P. zero developed from intervocalic Uto-Aztekan *-n-* are:

N. *-ton-tli* "suffixe marquant la petitesse, le mépris" (< **-tona-*): S. P. *tua-* "child, son," *-t'ua-, -rua-, -ntua-* "small, young of" (< **tuna-*)

N. *min-tontli* "arrière-petit-fils, -petite-fille" (< **mina-*): S. P. *mia'-* "tiny" (< **mina'-*)

N. *cen-tli* "tige, épi de maïs sec," *a-cecentli* "mauvaise herbe") < **sene-* ?); Tepecano *hun* "corn"[1] (< **sunī-* ?): S. P. *šīi-* "squaw-bush stem used in basketry" (< **šinī-*). This etymology assumes that Uto-Aztek **sene-* meant "stalk, stem" originally and that "corn" developed as secondary meaning

N. *ce(n)* "one"; Tar. *sine-;* Cah. *senu;* Cora *sen* "sicherlich": S. P. *šû-* "one" (< **šuu-* < **šunu-* < **šinu-* ?)

N. *-huān* "in company with": S. P. *-ŋw'ai-* "in company with" (< **-w'ani-*)

Cahu. *meni-l* "moon": S. P. *mvá-ts'* "moon" (< **mīna-* ?); Mono (In.) *müa-ts;* Shik. *mō'a-tsi;* Git. *müa-tº;* Fern. *moā-t;* Luis. *moi-la;* Hopi *möya-wo;* Tüb. *müya-l.* How Shoshonean **mīna-, *mīa- ,*mīya-* is related to Nahuatl-Sonoran **metša-* is not clear

N. *paina* "courir vite"; Pap. *wōhPŬ* "to run (plur.)": S. P. *pōya-* "to run about" (< **pɔina-*)

[1] On Dr Mason's authority.

N. *pipina* "manger, sucer des cannes à sucre," *pipinia* "s'humecter, s'imprégner d'humidité, en parlant d'un objet": S. P. *piyá-ϕ*^{i} "sap, juice" (< **pina-; -y-* is glide between *i* and *a*)

Another example of S. P. zero < *-n-*, as indicated within Shoshonean itself, may be:

Mono (In.) *tohina* "deer" (< **tīina*); Ban. *tina* "antelope" (= *tīna*); Luis. *ton-la;* A. C. *doni-l* (< **tīna-*); Cahu. *teni-l:* S. P. *tīγia-* "deer" (< **tīina-; -γ-* is glide), *parīia-* "elk" = "water-deer" (< **pa-tīina-*)

It is possible that intervocalic *-n-* sometimes disappears also in Papago. An example pointing to this is:

Pap. *tšŭ1* "to say" (< **tīni-* ?): S. P. *tīn'ia-* "to tell"

Uto-Aztekan η

In Nahuatl and Sonoran *η* is not found, except insofar as *m* and *n* are in Nahuatl assimilated before *k* and *kw* to *η*; this *η*, however, as being purely secondary in origin, does not interest us here. In Southern Paiute and other Shoshonean dialects, however, *η* not only occurs directly before *k-* sounds (in which case it need not be original but may go back to *m* or *n*), but also freely after vowels. In such cases Nahuatl-Sonoran regularly has *n*. This *-η-* does not always occur in all Shoshonean dialects, but is replaced by *-m-* or *-n-* in some. Where Nahuatl-Sonoran *n* corresponds to intervocalic Shoshonean *η* or *m*, I assume, for the present, that we are dealing with Uto-Aztekan *η*, inasmuch as no phonetic circumstances can be defined under which Uto-Aztekan *n* becomes Shoshonean *η* or *m*. It seems plausible to suppose that original *η* would in different dialects shift to *n* or *m*. Uto-Aztekan *η* is parallel to *n* insofar as it appears in Southern Paiute either as *η* (sometimes *m* ?) or zero. It may therefore be assumed that we have original geminated *η·* (S. P. *-η·-* or *-η-*) and spirantized *η*, which disappears. Examples of Uto-Aztekan *η* preserved in Southern Paiute are:

N. *tlanquai-tl* "knee"; Cora *tunú;* Pap. *tohʌ̃vŭ:* S. P. *taŋa-* "knee"; Mono (In.) *-taŋ;* Shik. *-daŋa;* Tüb. *toŋo-;* Mono (N. F.) *-rana-;* Hopi *dami* (perhaps *-am-* < **-ɔŋ-*, original *ɔ* labializing *η* to *m*); Git. *-tama;* A. C. *-tami;* Cahu. *-tam'i.* Uto-Aztekan **tlɔŋe-*, **tlaŋe-* ?

N. *ten-tli* "lips, mouth"; Huich. *teni;* Cora *téni;* Pap. *tšihʌ̃n1:* Fern. *-töŋi-* "mouth"; S. P. *tīmpa-* "mouth" (*-m-* assimilated to following *p*

from *ŋ*). In Shoshone *-dip*, Ban. *-tipá*, Mono (In.) *-tŏpi*, *-p-* is to be understood as *-p̣-* < *-mp-* (cf. Uncompahgre Ute *-p̣-* < *-mp-*). Uto-Aztekan **teŋi-* ?

Pap. *a'ax* "wings," *axnŭ-'ki* "to flap the wings": S. P. *aŋávu-φi* "arm and shoulder" (assimilated from **aŋï-* ?). Uto-Aztekan **aŋe-* ?

Cora *kin* "der Gatte," *kina* "einen zum Gatten nehmen"; Pap. *kux* "husband": S. P. *quṃ'a-* "husband" (< **quŋ'a-*, *u* labializing *ŋ* to *m* ?). Uto-Aztekan **koŋa-* ?

Without cognate in Southern Paiute, so far as at present known, is:

N. *can-tli* "joue"; Huich. *kana* "front"; Pap. *kam* "cheek" (why *-m-* ?): Tüb. *gaŋa-* "beard"; Git. *-qaŋa;* Mono (N. F.) *-γan;* Wob. *-gan*. Uto-Aztekan **kaŋa-* ?

An example of Uto-Aztekan *ŋ* corresponding to S. P. zero is:

Huich. *una* "salt"; Cora *úna;* Cah. *ona;* Pap. *ox:* S. P. *ɔá-φi* "salt" (< **ɔŋa-*); Wob. *ūma-bi* (*-m-* perhaps labialized from *-ŋ-* because of originally preceding *ɔ*); Shik. *oŋa-bi;* Tüb. *uŋa-l;* Fern. *aŋo-r* (metathesis from **oŋa-r* ?); Luis. *eŋ-la;* Cahu. *eŋi-l* (< **ɔŋa-l*); Hopi *ɬaŋa*. Uto-Aztekan **ɔŋa-* ?

Examples of S. P. zero < *-ŋ-*, based on Shoshonean evidence alone, are:

Gabr. *mama-r* "grass" (assimilated from *maŋa-* ? Kroeber analyzes it as reduplicated *ma-mar*): S. P. *maa-vu-* "bush, plant; clothes; thing" ("bush, plant" is probably its primary meaning, as *-vu-* is regularly employed as suffix with plant nouns). Shoshonean **maŋa-* ?

Hopi *moŋwi* "chief" (< **moŋi*, *w* being perhaps due to preceding *o*): S. P. *moi-* "to lead, act as chief" (< **moŋi-*, which would explain why *moi-* nasalizes following consonants). Shoshonean **moŋi* ?

Uto-Aztekan l

Uto-Aztekan *l* is not preserved as such in Shoshonean. Where *l* occurs in Shoshonean, as in Tübatulabal, Hopi, and Luiseño-Cahuilla, it is either spirantized from Shoshonean *t* or dissimilated from *n*. Uto-Aztekan *l* and *n* fell together in Shoshonean into *n;* original *l*, which seems nearly always to have been postvocalic, appears regularly in Southern Paiute in geminated form as *-n̆-*, only doubtfully in spirantized form as zero. Inasmuch as there is nothing to show that Nahuatl *l* and *n* vary according to purely

phonetic circumstances and as, furthermore, Nahuatl *l* has Sonoran reflexes distinct from those of Nahuatl *n* (Cora *r;* Tarahumare *l;* Cahita *r;* Tepehuane-Tepecano *r*), it seems justifiable to consider Uto-Aztekan *l* as primary and not merely derived from *n*.

Examples of Uto-Aztekan *-l-* corresponding to S. P. (Shoshonean) *-n'-* are:

N. *coloa* (< **koli-wa*) "doubler, plier une chose; faire des circuits, aller quelque part par des détours," *coli-ui* "pencher, se renverser, se courber, en parlant d'un mur"; Cora *kurê-yi* "kreisen (von Vögeln)," *kuri-pin* "sich auf dem Boden wälzen," *kuri-pua* "einen umherwälzen": S. P. *qɔ̄n'i-* "to return, come back by same road." Uto-Aztekan **kɔli-* ?

N. *cal-li* "house" (< **kali-*); Tar. *kali-;* Cah. *kari:* S. P. *qan'i-* "house"; Tüb. *hanī-l*

N. *col-li* "aïeul, aïeule": S. P. *qun'u-* "great-grandfather"; Ute *qön'u-* "paternal grandfather." Uto-Aztekan **kɔlo-* ?

N. *çali-ui* "adhérer à une chose," *çali-ui-ni* "gluant, visqueux": S. P. *san'á-p*[1] "gum"

N. *-l-li* (< **-li-tli*) suffix making abstract nouns from verb and adjective stems (e. g. *tona-l-li* "ardeur du soleil" < *tona*, *quā-zta-l-li* "blancheur de la tete" < *izta-c* "blanc"), *-li-z-tli* suffix making verbal nouns: S. P. *-n'a-* suffix making verbal nouns

Cora *kuólreabe* "Adler" (*kuolrea-* < Uto-Aztekan *kwalea-* ?): S. P. *qwān'á-nts'* "eagle." Without *l*-suffix are N. *quāuh-tli* "eagle": Cahu. *qwaa-l* "hawk (sp.)"; Hopi *kwa-hō* "eagle"

Tar. *sula* "heart"; Tep. *hura;* Tepecano *hur*[1]*:* Tüb. *šuuna-* "heart"; Git. *-xùn;* Fern. *-hùn;* Luis. *-sun*

If the vowel originally following *l* (*n'*) is syncopated in Southern Paiute, *-n'-* appears as that nasal (*m*, *n*, or *ŋ*) which is homorganic with the following consonant; in other words, a nasalized consonant results. Examples are:

N. *mīmiloa* (< **-mili-wa*) (refl.) "se rebuelca como una bestia" (Carochi): S. P. *miŋgwā-* "(frightened cattle) come out in one bunch" (< **min'i-*)

N. *-nal-co* "de l'autre côté": S. P. *-n'aŋqwa-* "from beyond" (< **-n'an'-* + unknown vowel, as it is syncopated in both Nahuatl and Southern Paiute)

N. *-li-* "to, for" in *-li-a* "to, for," *-l-lhuia* "to, for," *-l-tia* causative suffix: S. P. *-ŋgī-* "to, for" (< Uto-Aztekan **-li-ke*, Shoshonean **-n'i-kī*)

N. *xal-li* "sable, pierre qui se met en poudre": S. P. *siŋwa-mpv-* "sand, gravel" (< **siwan'-* + unknown vowel, syncopated in both Nahuatl and Southern Paiute)

[1] On Dr Mason's authority.

N. *uapal-li, uapali-tl* "planche, petit poutre, bois": S. P. *ɔvi-* + nasalized consonant (< **ɔpini-*)

I have only one example of Uto-Aztekan *-l-* corresponding to S. P. zero:

N. *çolō-ni* "couler avec fracas, en parlant d'un cours d'eau": S. P. *sɔ̄a-n'ia-* "to make a noise as of flowing water." Uto-Aztekan **sɔla-* ?

Under unknown conditions Uto-Aztekan *-l-* appears as Shoshonean *-t-* (S. P. geminated *-t'-* or spirantized *-r-*). This fact, while it cannot at present be satisfactorily explained, indicates that the treatment of Uto-Aztekan *-l-* was not entirely analogous in Shoshonean to that of *-n-*. Examples are:

N. *cuilo-ni* "sodomite": S. P. *kwit'u-mpi-* "anus" (nasalized form of suffix perhaps due to earlier form **kwin'u-* < **kwilu-*)

Cora *hure, -xure* "eine Kugel, einen Ball machen" (< **pure* < **pɔle*): S. P. *pɔt'ɔ-q'wa-* "to be round" (< **pɔ̄t'ī-*). Uto-Aztekan **pɔle-* ?

N. *-lo* passive and impersonal: S. P. *-t'ua-* impersonal suffix

N. *piloa* "pendre quelqu'un, suspendre" (< **pili-wa;* transitive meaning due to transitive suffix *-wa*): S. P. *pvrï'rï-* "to hang on to (intr.)" (< **pītī'-tī-*). Uto-Aztekan **peli-* ?

N. *pil-li* "child, son, daughter" (< **pili-*): Cora *péri, pári* "Sohn, Tochter, Kind (vom Vater gesagt)": A. C. *pulyi-ni-š* "baby" (i. e., *pulʸi-* < **puti-;* A. C. *-l-* is naturally not directly comparable to N. *-l-*). Uto-Aztekan **peli-, *pali-* ?

Uto-Aztekan w

Uto-Aztekan *w* generally appears as such in Nahuatl, Sonoran, and Shoshonean. In Nahuatl (where it is written *u* or *hu*) it appears before all vowels but *o* (doubtless original *wo* has become N. *o*). In Cora Uto-Aztekan *w* regularly appears as *v*. Examples of Uto-Aztekan *w* initially are:

N. *uitzilin* "petit oiseau qui bourdonne": S. P. *witsï-ts'* "bird"; Ser. (H.) *witši-t*

N. *ui-* verb prefix referring to long objects: S. P. *wī-* verb prefix "with the edge of a long object"

N. *uillallō-tl* "espèce d'oiseau très-allongé, volant peu, mais courant extrêmement vite": S. P. *wvt'ša-* "roadrunner"

N. *uēuê* "vieux, ancien," plur. *uēuel-quê:* S. P. *wī-t'u-š'u-* "long ago"; Ser. (H.) *-wutᵛ* "old (man, woman)"; Hopi *wōx-daka* "old man"

N. *uei* "big"; Cora *ve* "gross, gross sein"; Tepecano *gī* "big, great";[1] Fern. *wè* "all," *wūpū* "much"; Git. *wür* "much"; Ser. (H.) *wōr* "much"

N. *o-me* "two," *o-ppa* "twice" (< **wo-*), *na-hui* "four" (i. e. "duality of twos"; *-wi* "two"); Cora *wá-po* "two"; Tep. *gok-* (< **wo-*); Tepecano *gōk;*[1] Tar. *wo-ka;* Cah. *woi:* S. P. *wā-* "two"; Mono (N. F.) *waka-t;* Tüb. *wo;* Git. *wo;* Luis. *we';* Cahu. *wi'*

N. *uetzi* "to fall"; Cora *ve* fallen"; Pap. *kūɪ* "to fall" (read *güɪ*); Tepecano *gīš* "to fall in the water"[1] (< **wītši*), preterit *gīi:* S. P. *wi'ï* "to fall"

N. *ual* "vers ici, par ici": S. P. *waq'ï-* "hither"

Cora *vâte* (sing.), *vāteme* (plur.) "dastehen, vorhanden sein": S. P. *wāŋwi-* "to stand (plur.)" (< **wāmi-* ?)

Cora *ve* "dastehen, vorhanden sein"; Pap. *kūh* "to stand" (read *güh*); Tepecano *gīgu(k)* "to stop, remain" (plur.):[1] S. P. *wʌn'ï-* "to stand (sing.)" (*-wīn'ï-*). S. P. sing. *wï-n'ï-:* plur. *wā-ŋwi-* < **wā-mi-* agrees strikingly with Cora sing. *ve* (< **we*): plur. *vā-te-me* (< **wā-. . .-me*)

Cora *ve* "schlagen, werfen, schiessen, treffen," *vene* "schlagen"; Pap. *kūkv̈* "to whip" (read *gükv̈*); Tepecano *gïɸ* "to hit with the tail": S. P. *wʌn'ai-* "to throw down"

Postvocalic Uto-Aztekan *w* regularly becomes S. P. *-ŋw-*, Ute *-w-* with nasalization of preceding vowel. From Southern Paiute alone one cannot always tell whether *-ŋw-* goes back to *-m-* or *-w-*. Examples of S. P. *-ŋw-* < *-w-* are:

N. *-huān* "in company with": S. P. *-ŋw'ai-* "in company with"

N. *caui-tl* "temps"; Tepecano *ta-k'auw* "yesterday"[1] (< **-kawi?*): S. P. *qïaŋwi-* "yesterday" (< **kïawi-*)

Cora *tevi* "der Mensch, die Person"; Pima *tiwo-t* "man"; Pap. *tšüo-rš*ɪ "man, male" (< **tïwa-*): S. P. *taŋ'wa-* "man" (< **ta'wa-* < **tï'wa-*); Tüb. *datwa-l*

Cora *hiwe* "nach einem schreien, brüllen" (< **puwe*): S. P. *puŋ'wi-* "to make a peeping rat-like ncise" (< **pu'wi-*)

Cora *vlye* "regnen, regnen lassen," *vlyan-ta* "der Ort des Regens," *vl-te* "Regengötter": S. P. *uŋwa-* "to rain" (< **uwa-* < **wïwa-* ?); Mono (In.) *üwa-l* "rain"; Shik. *uwa-dü* (*üwa-* = *ïwa-*, perhaps dissimilated from *wïwa-*); Cahu. *wewa-l, wewi-nyi-š*. How Shoshonean **wïwa-* is related to Cora *vïye-, vïya-* is not quite clear. Probably Huich. *pou-houye* "pleuvoir," *ka-ouyé* "il pleuvra" belongs to these forms. Cora *vïye-, vïya-* and Huich. *-uye* seem to point to original **weye-, *weya-* (Huich. *u-* < **we-;* Cora *-ey-* palatalized to *-ïy-* ?), which, if dissimilated from **wewe-, *wewa-*, agrees remarkably with Shoshonean **wïwa-*

Cora *ta-vé* "aufhängen," *vivir* "aufgehängt sein" (< **-we, wiwi-*): S. P. *uŋwai-* "to hang" (< **uwai-*)

[1] On Dr Mason's authority.

Without known cognate in Southern Paiute is:

Huich. *tagui, tahoui* "poitrine" (i. e. *tawi*); Cora *tabi* (Diguet; = *tavi* < **tawi*): Cahu. *-tau'*, *-tawh* "breast." Uto-Aztekan **tawi*

In one case that was noted Uto-Aztekan *-w-* corresponds to Luiseño-Cahuilla *-ŋ-*, *-ŋw-*:

N. *cihuā-tl*, *ço(u)ā-tl* "woman": Luis. *šuŋa-l* "woman"; S. J. C. *šoŋwā-l*

In Papago and Tepecano original *w* became stopped to *g* (Dolores writes *k*; this *k* sound is, however, evidently phonetically distinct from, more nearly sonant than, original *k*, as indicated by Kroeber's remarks prefaced to Dolores' *Papago Verb Stems* and by its appearance finally as *-ĸ*, whereas original *k* appears finally as *-hĸ*), which, in Tepecano at least, appears as intermediate *-ɢ* when final. For some of my examples I am indebted to Dr Mason. Examples appear above (see N. *uei*, *o-me*, *uetzi*, Cora *ve* "dastehen," *ve* "schlagen"). Further examples are:

Tepecano *ga* "that"[1] (< **wa* < **u-a*): Huich. *hua-na* "là" (read *wa-na* "that-at", *wa-* being derived from demonstrative stem *u-*, see under Uto-Aztekan *o* in Part 1; *-na* is found as suffixed element in several other local adverbs given by Diguet,[2] e. g. *ma-na* "ici," *cha-na* "là," and in Cora *ma-na* "dort"); S. P. *wa-*, *ua-* (compounded of demonstrative *u-* "that yonder" and element *-a-*) in various local adverbs (e. g. *uá-n'ᵘ*, *wá-n'ᵘ* "there," *ua-t'ï-* "being there," *ua-t'uγwa-* "to yon place, through there"), cf. *i(y)ā-*, *i(y)e-* (e. g. *iyé-n'ᵘ* "here, present") from demonstrative *i-* "this here" and *-a-*

Tepecano *gisū-r'* "pithaya, organ cactus"[1] (< Uto-Aztekan **wiłsō-*): N. *uitz-tli* "épine," *uitzô* "épineux"

Tepecano *gigit* "to tremble (generally with cold)"[1] (< Uto-Aztekan **wiwi-*); Pap. *kikihw¨* "to tremble": N. *uiuio-ca* "trembler de froid"

Tepecano *kua'ɢ* "wood, to gather wood"[1] (< Uto-Aztekan **ku'a-wi-*): N. *quahui-tl* "wood"; Tep. *kwawi*. With Tepecano *-ɢ* cf. *-k*, *-ki* (read probably *-ɢ*, *-gi*) of Pima *kwa-k*, *koka-ki* "wood"

Tepecano *a'āɢ* "horn"[1] (reduplicated from **āɢ* < Uto-Aztekan **āwa-*): Cora *awa* "ein Geweih habend"

Tepecano *ba'āɯ* "eagle"[1] (< Uto-Aztekan **kwa'āw-*): N. *quāuh-tli* "eagle" (< **kwāw-*)

[1] On Dr Mason's authority.

[2] Diguet, *op. cit.* (see Part 1), pp. 29, 30.

Uto-Aztekan y

Examples of initial Uto-Aztekan *y* are:

N. *yaca-tl* "nose, point"; Tar. *yaxka;* Cah. *yeka;* Pap. *tāhĸv̈;* Tepecano *dāk*:[1] Hopi *yaka* "nose"; S. P. *yaγā-* "end"

N. *yecoa* "avoir des rapports charnels avec quelqu'un"; possibly also Pap. *tōr* "to copulate"; Tepecano *dom*, preterit *dot*[1] (probably to be understood as *doɒ*, as Tepecano aspirated *-t* regularly corresponds to Pap. *-hr*, Tepecano intermediate *-ɒ* to Pap. *-r;* reduplicated preterit from **do-* < Uto-Aztekan **yɔ-*): S. P. *yoγo-* "to copulate"

N. *yua* "envoyer une personne quelque part, conduire quelqu'un, envoyer un messager;" Pima *yoa-ka* "to bring": S. P. *yū'a-* "to carry more than one object"

Cora *yçiri, yìri* "es ist ein Zugang, Aufstieg da": S. P. *yĭ-* "doorway"

Examples of postvocalic Uto-Aztekan *y* are:

N. *ayo-tl* "tortoise": S. P. *'aya-* "turtle"; Cahu. *ayi-t*

N. *ceya, cea, cia* "vouloir, consentir, accorder"; Tepecano *hɔhi* "to desire"[1] (< **sɔhi* < **sɔyi* ?): S. P. *-šuya-* (probably to be understood as *-šiya-*), *-šia-* desiderative suffix (see under Uto-Aztekan *s*)

N. *-ya* suffix denoting imperfect tense; Tepecano *-dat* imperfect tense[2]: S. P. *-yĭ-* suffix denoting present tense (occurs also in narrative past of impersonal: *-p'vaγai-t'ua-yĭ-*). If this etymology is correct, Uto-Aztekan **-ya*, **-ye* might be understood as having originally had durative significance, without true reference to tense

Original **yuya-* > palatalized **yuyi-* is perhaps dissimilated in Huichol to **uyi-* > **uwi-* in:

Huich. *ouhoui* (i. e. *uwi*) "glace": Cahu. *yuya-t* "snow, ice," *yuyi-t;* A. C. *ayuyi-'a, yūi-t* "snow"; Luis. *yuyi-t;* Fern. *yua'-t*[a]*;* Git. *yua-t* (Fern. and Git. *yua-* probably dissimilated from *yuya*)

In Papago, Tepehuane, and Tepecano original *y* became stopped to *d* (Dolores writes *t*, which becomes *tc* before *i, ü*, and *u;* this *t—tc* sound is, however, evidently phonetically distinct from, more nearly sonant than, original *t—tc*, as indicated by Kroeber's remarks prefaced to Dolores' *Papago Verb Stems* and by its appearance finally as *-r*, *-rš*, whereas original *t—tc* appears finally as *-hr*, *-hrš*), which, in Tepecano at least, appears as intermediate *-ɒ*

[1] On Dr Mason's authority.

when final. For this phonetic law and for some of my examples I am indebted to Dr Mason. Examples appear above (see N. *yaca-tl*, *yecoa*, and *-ya*). Further examples are:

Pap. *tah* "to fly, to jump" (singular): S. P. *yāš'ī-* "flock flies." This holds only if *t* of Pap. *tah* is to be read as *d*

Pap. *tšu'ʌmmuh* "to punch with a stick or with the fingers": S. P. *ma-yum'u-k'wi-ŋqī-* "to nudge with the finger" (*ma-* "with the hand, finger"). This holds only if *tš* < *t* of Pap. *tšu'ʌmmuh* goes back to *d*

Pap. *tcuh* "to do" (< **du*); Tepecano *dun*, preterit *du* "to make," *do'da* "to do thus"[1]: N. *yocaya* "fabriquer"

Pap. *tšū'tšɪ* "to smoke tobacco"(< **dū'di-*); Tepecano *dīn*, preterit *dīl*[1] (doubtless to be understood as *dīD*, reduplicated preterit from **dī-* < Uto-Aztekan **yē-*): N. *ye-tl* "fumée odoriférante, parfum, tabac"

Tepecano *dūR* "black ant"[1]: N. *yoyoli* "insecte," *yolca-tl* "insecte, ver." Uto-Aztekan **yoli-* (for Tepecano *r:* N. *l* see Uto-Aztekan *l*)

Tepecano *daīm*, *a-dim*, preterit *ā-di* "to run, to follow": Cora ɣ*éi*(*me*) "gehen, wandern" (sing.)

Uto-Aztekan h

This sound is found in neither Nahuatl nor Southern Paiute (though some Southern Paiute forms beginning with pure vowels, that is, not preced by ', have at times been heard pronounced with weak breath-attack; e. g., *aγa-* was sometimes heard as *'aγa-*). It seems clear, however, from comparative Shoshonean evidence that *h* must be credited to the original consonantic system of Shoshonean. Such Shoshonean examples are:

Hopi *hoxta* "back"; Cahu. *-husa*

Hopi *honauwa* "bear"; Git. *hunat;* Fern. *hùnū-r;* Luis. *hunwo-t;* Cahu. *hunu-t:* Tüb. *una-l* (Tübatulabal *h* seems always to go back to Shoshonean *k*, while Shoshonean *h* disappears)

Moreover, Shoshonean *h* corresponds in a number of cases to Sonoran *h* (Pima, Huichol, Cora, Cahita; this Cora *h* is of course etymologically distinct from Cora *h* < *p*). There is, therefore, good reason to ascribe *h* not only to original Shoshonean but also to original Uto-Aztekan.

Examples of initial Uto-Aztekan *h* are:

N. *itta*, *ithua* "voir quelqu'un, découvrir" (< **ite-wa* ?); Pima *hitšv* "to

[1] On Dr Mason's authority.

see" (< **hitī*): Gabr. *huta-a* "to see"; Fern. *hūtu;* Git. *-hu.* Uto-Aztekan **hite-*, **hote-* ?

N. *aqui* "qui?" *acā* "quelqu'un"; Cora *háį-ki* "was, wie": Cahu. *haxi* "who?" Fern. *hakī;* Wob. *hake;* Shik. *haγa-dū;* Hopi *hak'i;* S. P. *aγa-* "where? how?" Uto-Aztekan **haki*, **haka*

N. *oco-tl* "pinus tenuifolia"; Cora *hukú* "Kiefer"; Tepecano *huk* "pine":[1] S. P. *oγo-mpu-* "fir" (with open *o;* probably *ɔγɔ-*). Uto-Aztekan **hɔkɔ-* ?

N. *èca-tl* "vent, air"; Cora *āka(ri)* "Wind"; Huich. *heheaca* "air": Tüb. *üxka-wa-l* "wind"; Mono (N. F.) *hig-wa-p;* Gabr. *a-hika-ŋ.* Uto-Aztekan **heaka-* ?

N. *i* "to drink"; Cora *i;* Tep. *i-;* Tepecano *īi;*[1] Pap. *ih;* Tar. *pahi* "to drink" (probably to be analyzed as *pa-* "water" + *-hi* "to drink": S. P. *ivi-* "to drink"; Mono (N. F.) *hibi-;* Shik. *hivi;* Hopi *hii-koo;* Tüb. *iū.* Uto-Aztekan **hi-*, **hie-*, **hipi-*

Huich. *houca* "jambes"; Cora *houca* (Diguet), *íka* "der Fuss, das Bein, der Knochen" (Preuss); Cah. *huoki:* Hopi *hokya* "leg"; Mono (N. F.) *-huk;* Wob. *-huk.* Uto-Aztekan **hoka-*

Huich. *hou-rou* "flèche"; Cora *ī-rí* "Pfeil"; Pap. *u'uh* "war-arrows" (reduplicated form): S. P. *ō*^{t} "arrow"; Hopi *hò-hū;* Luis. *hu-la;* A. C. *hu-l.* Uto-Aztekan **hō-*

Tep. *houam* "jaune"; Pima *oam* "yellow": S. P. *ɔa-q'a-* "to be yellow." Uto-Aztekan **hɔa-* ?

Examples of Uto-Aztekan postvocalic *h* are far from numerous:

N. *yei, ye* "three" (< **hei* < **pai* < **pahi* ?); Cora *wái-ka;* Tar. *bai-ka;* Cah. *bahi;* Pima *vai-:* S. P. *pai-* "three"; Mono (N. F.) *pahi;* Shik. *pahi-t;* Git. *bahi;* Fern. *pahai;* Luis. *pahai;* Tüb. *pai;* Hopi *pahio.* Uto-Aztekan **pahi-*

Huich. *-houjia-na* "devant" (i. e., *-hužia-*): S. P. *-u(w)a'-mi-* "in front of" (*-w-* is glide), *-u(w)i-t'uγwa-* "(moving) in front of" (**-husa-* > **-u'a-* > *-ua'-* ?)

Huich. *touhou* "braise": Ser. (H.) *tuu-* "coal"; Fern. *duu-t;* Cahu. *du-l* is probably not to be interpreted as from Uto-Aztekan **toho-*, as intervocalic *h* would be expected to remain in Southern Californian Shoshonean. Huichol *-h-* may have been secondarily introduced (< Uto-Aztekan *too-* ?) to break up the hiatus; or Diguet's *-h-* may be of merely orthographic, not phonetic, significance (cf. Diguet's Cora *mouhou* "head," where Preuss' orthography indicates that *mu'u* is meant)

Uto-Aztekan '

Quite a number of Uto-Aztekan languages, including Nahuatl and Southern Paiute, possess ' (glottal stop) as a definite consonant.

[1] On Dr Mason's authority.

It is somewhat doubtful, however, if there are any true cases of Sonoran or Nahuatl ' corresponding directly to Shoshonean '; in other words, the assumption of ' as an original Uto-Aztekan sound must be considered at present as not capable of being completely justified, though indications are not lacking of the soundness of this view. In a large number of cases ' can be shown to be the resultant of some other Uto-Aztekan sound (as in S. P. ' < *s;* N. saltillo < *-t* or *-k*, see below); such cases must, of course, be eliminated here. A small but convincing number of examples shows that widely distant Shoshonean dialects may agree in the use of the glottal stop (e. g., S. P. *'ayī-* "good," often heard as *ᵉ'ayī-*: Ser (H.) *a'aiye-;* S. P. *'i-*, *ᵉ'i-* "this": A. C. *i'i*).

Examples of initial Shoshonean ' in Uto-Aztekan words, where, as far as available material can be relied on, there is no ' to correspond in Nahuatl or Sonoran, are:

Huich. *aīhotzo* "bien": S. P. *'ayī-* "good"; Ser. (H.) *a'aiye-tš*

N. *i* "ceci"; Cora *i, hi* "dieser"; Pima *hitv* "this"; Tepecano *hidi:*[1] S. P. *'i-* "this" (*'itšī-* "this" as absolute inanimate demonstrative < **'itī-*); Shik. *idü* "this"; A. C. *i'i;* Luis. *ivi.* Uto-Aztekan **'i(te)* or **hi(te)* ?

N. *ayo-tl* "tortoise": S. P. *'aya-* "turtle"; Cahu. *ayi-l*

Similar examples of Shoshonean postvocalic or postconsonantal ' are:

Cora *hīwe* "nach einem schreien, brüllen" (< **puwe*): S. P. *puŋ'wi-* "to make a peeping sound" (< **pu'wi-*)

N. *-c-pac* "sur, au-dessus, en haut": S. P. *-v'āɣi-* "over" (< **-p'āki-*)

N. *-pan* "upon": S. P. *-v'an'* "on, upon"

N. *pani* "en haut, au sommet": S. P. *pa'an'i-* "to be high"

Cora *tevi* "der Mensch, die Person," Plur. *táite;* Pima *tiwo-t* "man": S. P. *taŋ'wa-* "man" (< **ta'wa-*); Tüb. *datwa-l* (perhaps *-tw-* is misheard for *-'w-*)

N. *-tia* causative suffix; Cora *-te:* S. P. *-t'ui-* causative suffix

Nahuatl ' (saltillo) can be clearly shown to be developed in certain cases from syllabically final *-t* or *-k*, though I am unable to suggest at present under what circumstances this reduction takes place. Examples of N. -' < *-t* are:

[1] On Dr Mason's authority.

N. *câ* (= *ka'*), *cat-qui* "to be in a place, *cat-yan* "place, siége," *catê* present plural of *câ;* Pima *katšu* "lay" (< **katī*): S. P. *qarī-* "to sit, dwell" (< **katī-*)

N. *uĕuê*(= *wĕwe'*) "vieux, ancien," plural *uĕuet-quê, no-uĕuet-cauh* "mon vieux": Ser. (H.) *-wut*[2] "old" (< **-wĭtĭ*)

N. *-mê* (= *-me'*) plural noun suffix: Pipil *-mĕt* (e. g. N. *matini-mê* plur. "wise": Pipil *matini-mĕt*)[1]

N. *-quê* (= *-ke'*) plural noun and verb suffix: Pipil *-quĕt* (e. g. N. *chi-huaz-quê* "they will make": Pipil *chihuaz-quĕt*)[2]

N. *-'* plural noun and verb suffix: Pipil *-t* (e. g. N. *cihuâ* = *siwa-'* "women": Pipil reduplicated *cixcīhuát-quĕt*, with double plural suffix *-t-quĕt;* N. *nemî* = *nemi-'* "they live": Pipil *nemi-t*)[2]

It is clear from this last example that N. *-mê*, *-quê*, Pipil *-mĕt*, *-quĕt* are compound plural suffixes, the plural suffixes **-me*, **-ke* (cf. Southern Paiute *-mĭ-*, *-q'a-*) being further pluralized by means of *-'*, *-t;* doubtless the analogy of such plural forms as *cihuâ* and *nemî*, *nemit* had much to do with the development of **-me*, **-que* to *-mê* (*-mĕt*), *-quê* (*-quĕt*).

There is at least one clear example of N. *-'* < *-k:*

N. *-uâ* (= *-wa'*), *-ê*, *-ô* "having" (e. g. *atla-uâ* "having an *atlatl*," *milê* "having a field," *eçô* "having blood," *uitzô* "having thorns" (forms in *-ê* and *-ô* are doubtless to be analyzed as originally final stem vowels *-e-*, *-o-* + *-'* "having"; this is indicated by such forms as *eço-tl* alongside of *ez-tli* "blood."*-e* spread by analogy from such forms as *cenê* "having *centli* < **sene-*, cf. S. P. *šĭī-* < **sīnī-*, in which *-e-* was etymologically justified), *calpole-c*" having a *calpolli;*" older N. *-que-tl*(*i*) "having" (e. g. *atla-ua-que-tl*" having an *atlatl*")[3] Cora *-ke* "to have" (e. g. *périke* "ein Kind haben"); Pap. *-'kah* "to have or claim": S. P. *-q'ai-*, *-γai-*, *-ŋqai-* "to have," *-q'a-ntĭ-*, *-γa-ntĭ-*, *-ŋqa-ntĭ-* "having"

Another group of examples of Nahuatl saltillo seems to have arisen as the reflex of a syncopated vowel following immediately upon another vowel. Examples are:

N. *èca-tl* "vent, air" (< **eaka-*); Cora *āka-ri* "Wind" (*ā* contracted from original *ea* ?); Huich. reduplicated *heheaca* "air": Tüb. *üxka-wa-l* "wind" (*üxka-* is perhaps to be understood as *ü'ka-* < **ü'ᵊka-* < **üaka-;*

[1] See W. Lehmann, "Ergebnisse einer Forschungsreise in Mittelamerika und México 1907–1909," *Zeitschrift für Ethnologie*, 1910, p. 730.

[2] Ibid., pp. 730, 731.

[3] Ibid., p. 731.

in S. P., -'*q*- often is heard as -*q*-); Gabr. *ahika-ŋ* "wind" (metathesis for **hiaka*-, or is *a*- prefix ?)

N. *ò-tli* "path, road" (< **oe*- or **oi*- < **hoe*- or **hoi*- < **poe*- or **poi*-); Cora *huyé* "Weg" (< **pɔye*-); Tepecano *voi* "road," plur. *vop'oi*;[1] Pap. *wō-'ĸŭ* "road, trail" (contracted from **woi*- or **woe* < **pɔi*- or **pɔe*-): S. P. *pō-* "trail" (contracted from **pɔɔ*- < **pɔi*- or **pɔī*-; Shoshone *poe*, *po'*; Luis. *pe-t;* Cahu. *pi-t* (contracted from **pɔi*- or less likely **pɔī*-); Hopi *pì-hū* (ì is long open *i;* contracted from **pɔi*- or less likely **pɔī*-); Bank. *po'-t* (< **pɔi*- or **pɔī*-). Tepecano, Shoshone, Luiseño-Cahuilla, and Hopi point rather to Uto-Aztekan **pɔi*- than **pɔe*- (Cora *huyé* may be **pɔi*- + *-e*, rather than < **pɔe*). It is not improbable that Uto-Aztekan **pɔina* "to run" (N. *paina* "courir vite": S. P. *pōya*-) is a denominative verb in *-na* from **pɔi*- "trail"; in N. *paina*, original *ɔ* has apparently been assimilated to *a* of the suffix, while *i* has had to be retained before *n* (all feeling of connection between N. *ò-tli* and *pai-na* is, of course, gone)

N. *pì-tli* "elder sister" (< **pia*-): S. P. *pia-* "mother, female" perhaps also in *yōp'ia-* "younger sister"; S. J. C. *-pī'-t* "younger sister" (< **-pia-t;* if final vowel of stem were origianlly *i*, we would expect *-š*, not *-t*, as suffix)

This explanation of N. ' may apply also to:

N. *tlèco* "monter": S. P. *tī'* "up" (N. *-è-* and S. P. *-ī* both seem to point to Uto-Aztekan *e* + some vowel which has become syncopated in N. and contracted with *ī* in S. P.)

In Papago there are numerous examples of ' (e. g., *to'ı* "to bet"; *tō'ᴘᴜ* "to twist"; *ha'ah* "jar"; *vā'oh* "wooden tongs for gathering cactus fruit"), but unfortunately in the great majority of cases I do not at present know of Nahuatl or Southern Paiute cognates. In at least two cases Papago has ' where Southern Paiute has none:

Pap. *va'ĸŭ* "hole": S. P. *ɔ-p'aq'ī-* "hole"

Pap. *-'kah* "to have": S. P. *-q'ai-*, *-γai-*, *-ŋqai-* "to have"

Cases of Sonoran or Nahuatl ' corresponding to Shoshonean ' are scanty. The best examples so far noted are:

Huich. *moho* "tête" (i. e. *mo'o*); Cora *mù* "Kopf" (i. e. *mu'u*), Tep. *mahou* "tête" (i. e. *ma'u*); Pima *mâ-âka* "head"; Pap. *mo'o:* Tüb. *tso-m'o-* "hair." Uto-Aztekan *mɔ'ɔ-*

Cora *kì* "fressen (von fester Nahrung)" (= *ki'i*, assimilated from **ke'i*); Pap. *kŭı* "to bite, sting": S. P. *qī'ī-* "to bite"

Pap. *tcu'aʍmuh* "to punch with a stick or with the fingers" (< Uto-Aztekan **yu'amu*-): S. P. *ma-yum'u-k'wi-ŋqī-* "to nudge with the finger"

[1] On Dr Mason's authority.

Pap. *šaʻɪ* "hanging (like clothes on line, on brush)": S. P. *tša'i-* "to catch." *tca'i-k'̲ai-* "to hold"

Tepecano *ba'ãɑ* "eagle"[1] (< Uto-Aztekan **kwa'ā-w-*): Cahu. *qwaa-l* "hawk sp." (read *qwa'a-* ?); Ser. (H.) *gwaa-tc* "condor" (read *gwa'a-* ?). If we assume Uto-Aztekan **kwa'āw-* instead of **kwāw-*, we can explain N. *quāuh-tli* "eagle," which otherwise offers difficulty. Original **kwāwaˣ-tli* (*-aˣ-* is here purely schematic, standing for any vowel, as I have no evidence to show what vowel was syncopated) would have had to develop (with its accentual scheme ˆ ´ ˋ) to **kwāwaˣ-tl* (in Spanish orthography **quāhuaˣ-tl*). Original **kwa'āwaˣ-tli*, however, would develop (with its accentual scheme ´ ˇ ˋ´) to **kwa'āw-tli* > , by later loss of ' and contraction of *-aā-* to *-ā-*, *kwāw-tli* (in Spanish orthography *quāuh-tli*)

Another example of this type would seem to be:

Pap. *hi'ɪ* "urine": S. P. *si'i-* "to urinate,"

though it is not obvious how this correspondence is to be reconciled with S. P. *si'i-* < **sisi-* (cf. N. *xix-tli* "excrément" < **sisi-*; see under Uto-Aztekan *s*), as there is nothing to show that Uto-Aztekan *s* ever becomes ' in Papago.

An example of S. P. ' corresponding to Nahuatl saltillo seems to be:

N. *nêˀ, nèhuātl, nèhua* (= *neˀ*) "I, me": S. P. *nīˀ* "I" (contrast with this absolute form N. *ni-* "I" as verbal prefix: S. P. *-nˀi-* "I" as verbal suffix)

There is one class of occurrences of ' which seems to be common to all Uto-Aztekan languages and which probably goes back to original Uto-Aztekan. This is comprised by reduplicated noun plurals and reduplicated frequentative verb forms, which in varying degree tend to take a glottal stop after the reduplicating syllable. According to Carochi, the reduplicating syllable of Nahuatl reduplicated noun plurals does not end in a saltillo, but in a long vowel (e. g., *māmaçâ*, plural of *maçatl* "deer"; *tēteô*, plural of *teōtl* "god"). In Pipil, however, the old saltillo of the reduplicating syllable is preserved as a palatal spirant (Lehmann's χ); examples are *táχtāgámēt* "persons," *laχlāmátquēt* "old women." In Papago and Southern Paiute such reduplicated noun plurals with glottal

[1] On Dr Mason's authority.

stop are found formed from stems beginning with vowels. Papago examples are: *a'aɴ* "wings"; *u'uh* "war arrows"; *o'ohт* "sand" (cf. S. P. unreduplicated *at'a-* "sand"); *u'uhhi'kv̈* "birds." A Southern Paiute example is *a'áip'atsiɳ'ʷ* "boys," plural of *áip'ats'*.

Many intensives and frequentatives in Nahuatl have a saltillo after the reduplicating syllable, e. g., *ni-pàpāqui* "estoy muy alegre" (*ni-pāqui* "estoy alegre"); *càcahuāntiuh* "en todas partes resuena (fama)."[1] Analogous Southern Paiute examples are: *i'ip'i-* "to sip, drink iteratively" (*ivi-* "to drink"); *a'ampaq'a-* "to talk repeatedly" (*ampaγa-* "to talk"); *a'ap'vi-* "to sleep repeatedly" (*ap'vi-* "to sleep"); *qaq'a'a-* "to sing repeatedly" (*qā-* "to sing").

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[1] See Carochi, pp. 473, 474.

REVIEWS

METHODS AND PRINCIPLES

Kinship and Social Organisation. By W. H. R. Rivers, M.D., F.R.S. London: Constable & Co., Ltd., 1914. Pp. vii, 96.

The three lectures embodied in Dr Rivers's booklet form so valuable a contribution to the subject and raise so many moot points on which mutual understanding is essential, that a detailed consideration of his argument by as many of his fellow-students as possible seems a desideratum.

In Lecture 1 the author begins with a provisional definition of the classificatory system of kinship. In his earlier paper "On the Origin of the Classificatory System of Relationships"[1] this system was described as ranging in the same category large groups of people differently related according to our conceptions and, on the other hand, distinguishing between relatives designated by a common term among civilized peoples. In the present essay Dr Rivers meets the argument, that our systems are also "classificatory" in regard to the use of such terms as "brother" or "uncle," by insisting that the classificatory systems proper classify far more extensively and sometimes even more consistently. While in our system there are six terms, viz., husband, wife, father, mother, father-in-law, and mother-in-law, that can refer only to a single person, the classificatory system in a perfect form contains no term that does not apply to a *class* of persons. This obviously establishes only a difference in degree not of kind, but it is only fair to Dr Rivers to say that a genuinely logical differentiation appears later on as a result of his investigation (p. 70 et seq.).

In a brief historical survey the author pays a generous tribute to Lewis H. Morgan's services. These have undoubtedly been very much underrated by some critics. On the other hand, I cannot believe with Dr Rivers that the vast bulk of Morgan's material had anything to do with his lack of recognition. If any external factor of this sort played a part, it was rather Morgan's intolerable diffuseness, the pages and pages of irrelevant data, and the unsatisfactory tabulation by which relationships according to our system are translated into native languages, so

[1] *Anthropological Essays presented to Edward Burnett Tylor*, 1907, p. 310.

that the connotation of any one native term can only be learned by a complete re-arrangement of the information as presented. Dr Rivers himself thinks that the chief cause of Morgan's underestimation lies in his deriving the origin of the kinship system from forms of social organization for which the direct evidence is lacking. Here, again, I must dissent. The chief intrinsic deficiency in Morgan's work, I think, is his lack of clearness and logical rigor. Thus, it is difficult to gather from various statements in *Ancient Society* and elsewhere, what part in social evolution Morgan ascribed to conscious reformatory movements. Sometimes he speaks of an unconscious reformatory innovation effected through natural selection; at other times of intermarriage in the "gens" [exogamous group] "prohibited to secure the benefits of marrying out with unrelated persons." Again, Morgan in a way forestalled the theory of Tylor, Frazer, and Rivers as to a connection between the classificatory system and exogamy. Indeed, he accounts for every difference between the Turanian-Ganowanian and the Malayan form of that system by the institution of exogamy. Yet he calmly announces that the Turanian-Ganowanian system and the "gentile" [exogamous] organization, while usually found together, are *not* mutually dependent! Considering in addition to this lack of logic Morgan's naïve evolutionism, we have a sufficient reason for his unwarrantable neglect by a more critical age. He was the typical incarnation of the "comprehensive and weak mind" (*esprit ample et faible*) in Duhem's classification of intellects; as soon as research became intensive and rigorous, it was natural that he should become the object of unhistorical contempt.

Passing from Morgan to McLennan, Dr Rivers points out the significant fact that while McLennan rejected Morgan's sociological explanation of the classificatory system, he did not bar *all* sociological explanation, but on the contrary derived the system from a change in the form of polyandry as outlined in his scheme of social evolution. Thus, as regards the broadest possible grouping of writers, McLennan stands on the side of his old antagonist Morgan, as against Professor Kroeber, who explicitly denies that relationship terminology has a sociological foundation, substituting instead purely psychologico-linguistic factors. It is against this view that Dr Rivers's lectures are primarily directed: he seeks to establish the necessity for assuming a sociological interpretation, and then to propound a specific form of sociological explanation. Although the latter is not developed before the third lecture, it will add clearness to the comments on some of Dr Rivers's points to state at the outset that his special theory coincides in principle with that expressed

in the previous article of the Tylor anniversary volume. That is to say, he holds with Tylor that exogamy and the classificatory system are aspects of a single phenomenon, kinship being reckoned according to alignment in exogamous groups; and like Tylor and Frazer, Dr Rivers thinks of exogamy primarily as developed in a dual organization of society.

McLennan, while giving a sociological interpretation of the classificatory system, belittled its social significance, boldly denying that any rights or duties were affected by the relationships comprised in it. This view has become untenable through more recent information from Australia and elsewhere, and Dr Rivers is able to prove quite satisfactorily from Oceanian data that "there is a very close correlation between the presence of a special term . . . and the presence of special functions attached to the relationship." The classificatory system is thus composed of elements that are far more than *merely* "terms of address and modes of mutual salutation," as McLennan and his followers assumed. While the author does not insist that the correlation is an absolute one it would have been worth his while to explain that even between relatives not distinguished in language by distinct kinship terms the natives often clearly differentiate in thought and social usage. This has been pointed out for Western Australia by Mr A. R. Brown. In other parts of Australia we find such things as the custom of allotting to a man a woman from a group including his own mother, but never allotting his own mother.[1] Among the Hidatsa of North America we have the case of a boy buying certain ceremonial privileges from his own father exclusively, though all father's clansmen are included in the same term as his actual father; while among the Crow Indians regulations applying to brothers-in-law in a classificatory sense assume a specialized form with regard to the wife's own brother. In short, we must recollect that social usages are not necessarily reflected in language.

In setting out to controvert Kroeber's view Dr Rivers begins by deriving specific variations in the classificatory system from specific social institutions. The first variation dealt with is derived from the social usage by which a man regularly marries his mother's brother's or his father's sister's daughter,—the custom which Tylor labeled "cross-cousin marriage." Dr Rivers shows that where this institution is established the mother's brother, father's sister's husband, and father-in-law are combined in one and the same person, and similarly the father's sister, mother's brother's wife, and mother-in-law coincide. In Fiji, the southern New Hebrides; and Guadalcanar—the only parts of Melan-

[1] Spencer, *Native Tribes of the Northern Territory of Australia*, p. 47.

esia where Dr Rivers found cross-cousin marriages—the kinship systems show exactly those features theoretically deducible from this institution, that is to say, the relationships that are combined in a single person are designated by a single term. Hence Dr Rivers infers that these features are conditioned by the social practice. I regard this conclusion as convincing, especially when taken in conjunction with the impotence of any purely psychological interpretation. Why, as Dr Rivers asks, should the mother's brother be considered more similar to the father-in-law than the father's brother, etc., unless he becomes so through the social institution under discussion?

In Lecture II Dr Rivers turns to other special features of classificatory systems. In the Banks Islands he finds that "cross-cousins apply to one another terms of relationship which are otherwise used between parents and children." He rightly points out that from a purely psychological point of view it is impossible to understand why one kind of cousin should be classed with the father, and another kind of cousin with a son or daughter. Casting about for a sociological explanation he finds mythological and other support for the former practice of handing over one wife to the sister's son; this naturally raises the sister's son to the status of his maternal uncle, whose children become thereby the "children" of their mother's new husband. In this way he finds an adequate interpretation of the confusion of generations in the kinship nomenclature. But while it is true that the form of marriage described, if reflected in terminology, would produce the observed features of the system, an alternative interpretation is suggested by corresponding North American data. As Dr Rivers points out in another connection (p. 54) the Tewa Indians denote all male members of the father's clan, regardless of age, by a single term. This feature occurs also among the Crow and Hidatsa, where there turn up likewise the precise features that arouse Dr Rivers's interest in the Banks Islands. By these tribes the mother's brother is classed with the elder brother, hence his children, being a "brother's" children, are classed with the children and address their male cross-cousin as "father." But, given maternal descent, the mother's brother is a clansman, i. e., clan brother; and the father's sister's son is a father's clan brother. Hence, the Banks Island classification of relatives may be merely a result of the alignment of kindred according to their clan affiliations. The confusion of generations is still explained on sociological grounds, but on different grounds from those suggested by Dr Rivers. Instead of having recourse to a special form of marriage, we fall back upon the general principle of exogamy, supposing that in Melanesia, as

demonstrably among several Siouan tribes, it has occasionally overridden the principle that different generations shall be separated by distinct terms.

In Pentecost the author encountered a feature still more remarkable than the confusion of contiguous generations: here persons *two* generations apart were classed together. Some evidence indicating that a man formerly married his brother's granddaughter (i. e., his "granddaughter," classificatorily speaking) suggested that this practice was the cause of the Pentecost anomalies. As a matter of fact, various peculiarities of the kinship system in question would follow from such an institution. But again I am tempted to ask whether there is not an alternative hypothesis. The most striking anomalies cited by Dr Rivers (pp. 31 f., 36) are the classing together of the mother's mother and elder sister; of the wife's mother and the daughter; of the wife's brother and the daughter's son. Now, given maternal descent and an exogamous organization, my mother's mother and my elder sister are both my clan sisters; my wife's mother and my daughter must both belong to the same exogamous group; and my wife's brother and my daughter's son are necessarily fellow-clansmen. The additional fact that we are dealing with a *dual* exogamous organization accounts for the cases of my daughter's husband and my wife's father, both of whom must be members of my own moiety; and of the husband's brother and the mother's father. A grouping of relatives according to exogamous divisions thus again obviates the necessity for deriving variations of the classificatory system from special forms of marriage.

In the instances hitherto cited features of the kinship nomenclature are derived from social practices actually found together with them. Dr Rivers now turns to the important methodological inquiry, whether a social practice may safely be inferred from a feature logically deducible therefrom. His first case is the Viti Levu classification of the father's father with the elder brother, and of the son's wife with the mother. Since the confusion of generations here roughly corresponds to the Pentecost anomaly, Dr Rivers at first looked for an explanation in the same direction, vainly seeking to correlate the differences between the Pentecost and Viti Levu systems with the observed difference in descent, which is patrilineal in Viti Levu. This line of thought he abandoned when the system of Buin, where maternal descent obtains, turned out to resemble the Viti Levu nomenclature in classing together the father's father and the elder brother. He was thus led to conceive as the common cause of the Buin and Viti Levu feature the practice of marrying a wife

of the father's father, for which there is no evidence, but which explains certain additional elements of the Buin system.

I believe that Dr Rivers's original idea of correlating Pentecost and Viti Levu differences with corresponding rules of descent was correct. Given paternal descent, and a dual organization, my father's father is my elder clan brother, and my son's wife must belong to my mother's moiety. For the Buin features I am not able to give a thoroughly satisfactory explanation. The choice lies between my hypothesis, which furnishes a common explanation of the Pentecost and Viti Levu data, and Dr Rivers's hypothesis, which derives the Viti Levu and Buin data from a common social institution of purely hypothetical character. On the abstract principle that hypothetical causes shall not be multiplied, I think the preference should be given to my own suggestion, especially as something may be offered to account for the Buin features. If we assume that the Buin formerly had paternal descent, the feature they share with the Viti Levu people is explained, and so is the grouping together of the elder brother's wife with the wife of the father's father. What remains unaccounted for is why these two relatives should be classed with the elder sister, who cannot possibly belong to their moiety. On the other hand, unfailing reflection of sociological conditions in terminology should not be expected in every tribe. Thus, we have in North America the case of the Crow system, otherwise typically classificatory, where in direct address the father's sister is classed with the mother. All this is avowedly not a satisfactory explanation of the last-named Buin peculiarity, and even as regards other traits of this nomenclature I have assumed, quite gratuitously, a former period of patrilineal descent. Nevertheless, all the factors suggested, whether applicable in the present instance or not, have demonstrable existence and should be relied upon in preference to a condition never observed anywhere and with so slight an *a priori* claim on our credulity as the practice of a man's marrying a grandfather's wife.

Dr Rivers is fully aware that as a matter of scientific method we must consider the possibility that some of the classifications found may have other causes than those he suggests (p. 42). Indeed, to some of his general comments on the method of interpretation to be pursued when terminological features that are logically deducible from certain social usages and often occur in association with them are found without the usages, most ethnologists will heartily assent. First of all, Dr Rivers shows that some of the features deducible from cross-cousin marriage may also be the result of another form of marriage, observed in the

Torres Straits,—hence it is only the distinctive elements of the cross-cousin marriage terminology that permit a safe inference as to a former practice of cross-cousin marriage. Secondly, he rightly argues that the one-time reality of this institution becomes far more probable if found among culturally related peoples. This principle is well exemplified by some Melanesian instances. Turning to South India, Dr. Rivers finds in three of the chief languages of that area precisely the nomenclature that would follow from a cross-cousin marriage. The Todas not only share this terminology but also have the usage to the present day, and there is other evidence for its former prevalence in India. Dr Rivers may therefore be quite right in treating the terminology, even where now unconnected with cross-cousin marriage, as a survival of this institution. But I cannot agree to the proposition that "even if there were no evidence, the terminology of relationship is so exactly such as would follow from the cross-cousin marriage that we can be certain that this form of marriage was once the habitual custom of the people of South India" (p. 49). Apart from the fact that the terminology may be deducible from other social practices, as Dr Rivers himself points out, he seems to me to ignore a rather important aspect of the problem. It has been shown in North America that features of kinship terminology may be borrowed; the geographical distribution of certain traits and categories in Kroeber's sense is indeed unintelligible on any other hypothesis. When, therefore, we find a terminology that reflects cross-cousin marriage but no such form of marriage associated with it, the terminology may indeed conceivably be a survival of that institution, but it may also have been borrowed from a tribe in which the relationship terms do rest on a sociological foundation.

Considerations of the type already adduced will make Americanists even more skeptical than is Dr Rivers himself as regards the interpretation he suggests of the corresponding North American data. Since cross-cousin marriage is, so far as we now know, so narrowly confined to the Northwest coast, it seems premature to infer its one-time prevalence among such remote and culturally distinct tribes as the Cree and Dakota on the ground that their nomenclature partly coincides with that of Fiji and the New Hebrides. There is a series of American data that Dr Rivers connects with the Banks Islands custom of marrying a maternal uncle's wife (pp. 52–54). But (granting the basic theory that exogamy has moulded the classificatory system) it is much simpler to interpret the Melanesian data through those from America, which, as Dr Rivers admits, are intelligible as the result of the exogamous principle over-

riding the generation factor. I do not understand his difficulty with the Pawnee instance of the wife being classed together with the mother's brother's wife. Given a dual exogamous organization and maternal descent,[1] my mother's brother belongs to my moiety, hence our wives both belong to the complementary moiety, and thus may very readily be grouped under a single designation. Thus a swish of Occam's razor again lops off an unnecessary auxiliary hypothesis.

In Lecture III the author sets out to show that marriage is not the only social institution that has moulded relationship nomenclature. In some cases it may be rather "an attitude toward social regulations connected with marriage." In Merlav, for example, the wife's sister and the wife of a man's brother are classed with the sister, and the husband's brother and a woman's sister's husband are classed with the brother, while other types of brother-in-law and sister-in-law (in our sense) are ranged in other categories. Dr Rivers points out, quite properly it seems to me, that no psychological reason can be given for this differentiation. On the other hand, he finds a sociological reason in the attempt to emphasize the fact that a form of marriage once allowed (with the wife's sister) is now tabooed; and this can be done most effectively by grouping the wife's sister with the sister. The author's attitude towards psychological and sociological causation, respectively, appears rather clearly in his treatment of a special Melanesian feature. In addressing a wife's sister the Melanesian uses not the term he himself applies to a sister, but that employed by a woman to denote her sister, *i. e.*, the one applied by his wife. Dr Rivers plausibly suggests that the husband simply used a term familiar to him from the mouth of his wife.

> The process is one in which psychological factors evidently play an important part, but those psychological factors are themselves the outcome of a social process, viz., the change from a condition of sexual communism to one in which sexual relations are restricted to the partners of a marriage. Such psychological factors as come into action are only intermediate links in a chain of causation in which the two ends are definitely social processes or events, or, perhaps, more correctly, psychological concomitants of intermediate links which are themselves social events. We should be shutting our eyes to obvious features of these Melanesian customs if we refused to recognise that the terminology of relationship here "reflects" sociology.

This is very well *if* the hypothetical change from sexual communism

[1] This type of organization has not been established for the Pawnee; for the sake of the argument I am assuming the correctness of Dr Rivers's basic hypothesis that this organization was a general condition among tribes with a classificatory system.

to the present form of marriage corresponds to reality. But, what if it does not? Is it not simpler to eliminate the hypothesis and suppose that the husband calls his sister-in-law "sister" because she, a relative stranger to him, is so called by his wife?

Having hitherto dealt with minor variations of the classificatory system, Dr Rivers at last attacks his central problem. Morgan distinguished the Malayan (or rather, as we should now say, Hawaiian) and the Turanian-Ganowanian form of this system. The characteristic of the former is the paucity of its terms, no distinction being made between the uncles or aunts of the father's and of the mother's side, nor between cousins who are children of *Geschwister* of the opposite sex and cousins descended from *Geschwister* of the same sex. Are these differences between the Hawaiian and the Turanian forms correlated with differences in social organization? Dr Rivers replies by showing that "there are two main varieties of social organization in Oceania," with an infinite number of intermediate conditions. In one variety marriage is regulated by some kind of clan-exogamy, including under the term 'clan' the moieties of a dual organization; in the other variety marriage is regulated by kinship or genealogical relationship" (p. 67). Where the clan system is absent, Dr Rivers finds, the kinship terminology conforms to the Hawaiian pattern; where the clan dominates marriage the terminology is characteristically Turanian; where marriage is regulated by both the clan and the genealogical factor, the terminology is also intermediate. From this the author infers that the kinship nomenclature of Oceania has undergone a partial process of simplification: clan exogamy with the Turanian-Ganowanian form of terminology represents the prior condition, which has been partly superseded by a clanless organization of society with the Hawaiian form of terminology. Thus, Morgan's chronology is inverted in accordance with the suggestions made by Dr Rivers in his previous essay on the subject, and the "classificatory" system of kinship is designated as simply the "clan" system.

In this theory certain elements should be considered independently of one another. The graduated scale of social organizations in Oceania with its corresponding series of kinship terminologies, indicates a correlation between kinship and social organization, but does not by itself prove in what direction a change has taken place. The view that the clan organization came first in Oceania is supported by the fact that the distinctive features of the more usual form of classificatory system are at once summed up by the statement that members of the same exogamous unit are classed together. Barring Morgan's unsatisfactory

interpretation of the origin of the Hawaiian system in a purely hypothetical condition of society, we have no way of accounting for it at all as a form out of which the Turanian system might have developed. On the other hand, a simplification of the Turanian terminology leading to that of the Hawaiian model is not only abstractly intelligible but is supported by direct historical evidence. For this, it is true, the author refers us to his forthcoming book on *The History of Melanesian Society*, but he has already given us some positive data in the Tylor anniversary volume (p. 312). For example, among some of the Torres Straits Islanders the distinction between the father's sister and the mother's sister is becoming obsolescent. In other words, there is historical evidence for the process of simplification, which Dr Rivers assures us will be greatly multiplied in his new publication. I am therefore, speaking as a mere layman in Oceanian ethnology, very strongly impressed with the author's argument as to the sequence of kinship systems in this area. On the other hand, I am not nearly so confident about the legitimacy of inferring a pristine clan organization in parts of Polynesia where it has never been observed, for, as stated above, it seems possible to me that a clanless tribe should have borrowed part of its nomenclature from a neighboring people divided into clans.

A fault of omission, in my opinion, lies in the absence of any clear and succinct definition of precisely what features of the "classificatory" systems require a theory to become intelligible. I believe it is the merging of collateral and lineal lines of relatives that most strongly impressed Morgan himself and that distinguishes all Turanian-Ganowanian systems from non-classificatory terminologies. The wide distribution of this feature certainly calls for an explanation, and Dr Rivers accomplishes this task admirably by falling back on so general a social phenomenon as exogamy. As I have tried to show above, this principle, especially in the form of a dual exogamous organization, is indeed rather more effective than Dr Rivers himself is aware since it dispenses with the necessity of several of his auxiliary hypotheses.

If exogamous kin groups produce the classificatory kinship terminology, what are the correlates of non-classificatory terminologies? In several pages of highly suggestive though avowedly sketchy matter the author develops the view that our own nomenclature reflects the family that forms the unit of our social organization, while the systems of certain European and Northeast African languages have for their foundation the extended patriarchal family or *Grossfamilie*. He rejects Morgan's designation of our own system as "descriptive," reserving this term for

the properly descriptive terminologies of the last-mentioned type. Instead of Morgan's two varieties, the classificatory and the descriptive systems, Dr Rivers thus proposes a division into three varieties,—the clan, family, and "kindred" systems. Entirely satisfied with Dr Rivers's separation of his second and third group, we are tempted to ask whether even his triple division exhausts the variety of existing terminologies. In North America we find for example a wide swath of territory where the kinship nomenclature is not classificatory but shows a marked development of reciprocal terms. Similarly, we find that certain of Professor Kroeber's categories sometimes accompany and sometimes do not accompany the confusion of lineal and collateral relatives. Hence, a definite enumeration of possible types seems premature. At the same time we have thrust upon us the query, what may be the *social* causes of the additional varieties noted. And here sociological causation, often enough, seems excluded. On what *social* grounds does a Crow address his grandson as his "son," but speak of him non-vocatively as "grandson". Why do so many tribes employ distinct terms in addressing and in speaking *of* one and the same relative? The psychologico-linguistic explanation is, I sadly admit, no explanation from psychological principles. It is a confession of ignorance, a recognition of the capriciousness of human mentality. Wherever possible, I should like to have determined a social basis for a given terminological feature. Nevertheless, when this cannot be done, we must admit that some features simply *will* not be reduced to law.

To sum up. Dr Rivers has definitely refuted Professor Kroeber's universal negative as to the sociological causation of kinship terminology. He has proved, at least to my satisfaction, that in regions of Melanesia the nomenclature has been partly moulded by the custom of cross-cousin marriages. He has developed the theory, dimly divined by Morgan and clearly formulated by Tylor, that exogamy and the classificatory system are only aspects of a single phenomenon. In the place of Morgan's view that the Hawaiian system represents the earliest kinship terminology known, he has made it highly probable that it is a later simplification of the Turanian form. On the other hand, Dr Rivers errs, I venture to believe, in holding that all of kinship terminology is sociologically determined. The human mind is not a wax tablet on which objective reality is automatically registered; hence certain sociological facts may fail to impress it sufficiently to lead to expression in language. On the other hand, facts of a very different order may lead to the grouping together of relatives whom we regard as distinct. The historical signi-

ficance of Professor Kroeber's paper lies not in his rash denial of sociological causation, but in his recognition of the various categories in which primitive man ranges his relatives and of the fact that these categories may be used to define the individuality of a given system and even of a group of geographically contiguous systems. This profound thought marks one of the most notable achievements in the history of the subject and deserves somewhat warmer recognition than it has yet received at the hands of such writers as Herr Cunow and Dr Rivers. There is another gap in Dr Rivers's treatment. The clan or gentile organization may be primeval in Oceania; but in North America all those who have been especially interested in the subject, such as Dr Swanton, Dr Goldenweiser and the present writer, have come to the conclusion that the exogamous kin group is a relatively late phenomenon, the earlier organization being that of the "loosely" organized tribes of California and the Plateau region. The kinship nomenclature of these peoples finds no place in Dr Rivers's scheme, although as I have tried to show elsewhere[1] they strongly corroborate his general theory since a clanless organization seems to go hand in hand with the distinction of collateral from lineal relatives.

It must be clear from the foregoing account that Dr Rivers has rendered to ethnology the inestimable service of opening many lines of investigation. In the first place, it is to be hoped that carefully prepared records of kinship nomenclature will begin to come in from all parts of the world, especially from such regions as Africa, regarding which our present ignorance is lamentable. The correlation of these terminologies with concomitant social customs and organization will henceforth become a duty. We may further hope that a study of the categories employed may lead to a definite knowledge of the geographical distribution of distinctive features of terminology and at the same time result in a more adequate classification of existing terminologies than Morgan's bifurcation or even Dr Rivers's tripartite scheme. Finally, the intensive consideration of particular systems must bring to light many points of psychological interest, while comparison with the systems of culturally and linguistically related tribes will show what differences in nomenclature persist where differences in social organization are eliminated and linguistic differences minimized.

ROBERT H. LOWIE

[1] "Exogamy and the Classificatory System of Relationship," pp. 223–239 above.

Notes and Queries on Anthropology. Edited for the British Association for the Advancement of Science. By BARBARA FREIRE-MARRECO and JOHN LINTON MYRES. London, 1912. 4th ed. (Price 5s.)

On the subject of technology this volume leaves little to be desired. The questionnaire is very comprehensive, and the field-worker following its directions must inevitably produce results of lasting value. The contents of this section cover every phase of material culture, as may be observed by the appended partial list of sub-headings: Personal Enhancement, Deformations, Painting, Staining, Tattoo, and Cicatrization, Personal Ornaments, Clothing, Habitations, Earthworks, Stone Monuments, Waterworks, Fire, Food, Cannibalism, Drugs, Collection of Foodstuffs, Hunting, Fishing, Domestication of Animals, Agriculture, Weapons, Leatherwork, Basketry, Weaving, Dyeing and Painting, Woodwork, Pottery, Stone, Bone, etc., Mining and Quarrying, Metalworking, Machinery, Travel and Transport.

On Sociology, the handbook is equally complete, but what is exceedingly suggestive is "A General Account of Method," contributed by W. H. R. Rivers, embodying much excellent advice for the beginner derived from the field experience of seasoned workers. This, and the "General Note on the Collection of Specimens," by Miss Freire-Marreco in the preceding section on Technology are the most suggestive and instructive passages in the sections under consideration. The part on Arts and Sciences is fully as good as the foregoing, and the reviewer is especially pleased with the remarks on terminology. Whether or not Linguistics should be included under the heading of Arts and Sciences may be a matter of discussion.

What the reviewer considers a serious defect in this otherwise satisfactory book, is the lack of a comprehensive reference bibliography. The list of works given is all too brief, especially under the head of "Special Studies of Regions or People," where it would have been well to enumerate twenty to forty works instead of ten. With especial reference to America, the linguistic selections are good, though the *Handbook of American Indian Languages* is ignored. But in all other matters, in this list, and in the body of the book itself, the peculiar insular predilection for writers of the American school of mysticism to the exclusion of such solid contributors to our knowledge as J. O. Dorsey, Wissler, Dixon, and a host of others, continues to impress the reviewer with the fact that the English worker seems to have a preconceived idea of what the ethnology of the "Red Indian" should be, and governs his working library accordingly.

ALANSON SKINNER

In the treatment of physical anthropology the authors have based their explanations on those contained in the report of the "Committee on Anthropometric Investigations" (Proc. Brit. Ass., Dublin, 1908, p. 351 ff.). The observations on the structure of the body are divided into two classes: descriptive characters and measurements. As the book is meant to be placed in the hands of the traveler and non-anthropologist (see Preface, pp. III-IV: "To promote accurate anthropological observations on the part of the travelers, and enable those who are not anthropologists themselves to supply the information which is wanted for the scientific study at home"), it must be stated that in general the instructions of this chapter leave much to be desired in order to be of extensive use for the untrained traveler and the science of physical anthropology. Although the authors point to the "essentiality of elementary training" (p. 9), this is felt as a sort of contradiction to the statement just quoted. Still, even those who have enjoyed elementary training will do far better to utilize the Report of the above-named Committee, recommended at the end of this section (p. 12).

What I miss most are explanatory figures, which could be of quite a simple sort and the lack of which would fully justify another edition. Little can be accomplished scientifically by mere description of types of hair as curly, frizzy and woolly without reference to an illustration or specimen. The like holds true for the determination of colors. There are sets of tinted artificial hair specimens and eyes prepared for anthropological investigation which should have been mentioned and recommended here. The untrained observer moreover can derive little benefit from sole explanation of measurements. Figures of the human body, such as are contained for instance in the "Report" noted above, are much more useful and simpler, as well as perhaps greater space-savers in the determination of measuring-points than explanations.

A most necessary advice for securing accurate results is also wanting, namely the indication of anatomical measuring—points with pencil or crayon on the human body. The selection of measurements is quite sufficient. But in English textbooks, especially, stress should be laid on the application of the metric system in order to assure comparable results. This is done by the authors before entering upon the description of skull and skeletal measurements. Why not in somatometry also?

It may be hoped that all these points will be considered in a new edition. The probably most important chapter of this otherwise useful book would thus be easily brought up to date.

BRUNO OETTEKING

If space could not be given to a fairly adequate alphabet it would perhaps have been better to have advised the users of the book to confine their attention to the transcription of proper names and untranslatable native terms. Certainly no American language could be written with the limited number of characters recommended. If the two sounds represented in English by *th* are encountered, two symbols are of course required for their recording. In English, to be sure, we get along fairly well, because English is not phonetically written. It seems hardly necessary to provide for the writing of combinations of either *ks* or *gs* by *x* when the two letters give a more exact rendering. No provision is made for glottal stops, glottalized series of consonants, and many other extremely important sounds. It may well be that even a fairly adequate system for recording languages could not be given in such a book. That hardly excuses the inclusion of a system so nearly useless as the one employed.

The "Notes on Learning a New Language" by J. P. Harrington are excellent. Although each individual will of necessity make some adjustments to his own personality, the general method advocated can hardly be improved upon.

P. E. GODDARD

Fear and Conventionality. By ELSIE CLEWS PARSONS. New York and London: G. P. Putnams' Sons, 1914. Pp. xviii, 239.

This most recent book by Dr Parsons is only incidentally of the sort ordinarily reviewed in this publication. But for two or three considerations it might be dismissed with other books of similar purpose, intended to bring about changes in present-day society. Anthropology poses as a pure science, investigating, analyzing, and comparing human societies. It is not concerned with values and has no conscious desire to make practical applications of the ascertained facts. In America, at least, it is inclined to ignore all people who can read and write as too sophisticated for its attention.

It will surprise all of us and please some of us to observe with what effect the facts of ethnology can be used in the solution of present-day problems. These customs of past and passing peoples are not merely interesting and curious facts. Properly arranged, they teach the popular readers for whom the book is written that the ways of the so-called barbarous peoples are not so very different from our own. The ethnological readers of the book, too, will be surprised to find that the customs of New York and Washington after all are not radically different from those of Australia.

As to the method employed by Dr Parsons in the use of ethnological material, it may as well be conceded that certain acts of mankind are everywhere to be found and to be expected because they are the results of the physiological and psychological equipment common to man. We in America refuse to be particularly interested in such universal human traits because we have chosen to narrow our field to those phases of culture which are sufficiently independent of such causes as to be subject to social transmission. We are in fact primarily interested at present in that one matter alone—transmission.

Some time in the future Dr Parsons's book may be a source of ethnological information concerning the inhabitants of the United States of the twentieth century. She is by no means an indifferent observer.

P. E. GODDARD

NORTH AMERICA

The Double-Curve Motive in Northeastern Algonkian Art. By FRANK G. SPECK. (Memoir 42, Geological Survey of Canada, Ottawa, 1914.) v, 17 pp., 25 figs., 18 pls.

This paper, dealing with a fundamental motive in Algonkian art, is a pioneer work in a region where motives often attain a highly intricate and modified character.

> The motive itself is what may be termed the "double-curve," consisting of two opposed incurves as a foundation element, with embellishments more or less elaborate modifying the enclosed space, and with variations in the shape and proportions of the whole. This simple double-curve appears as a sort of unit, capable of being subjected to such a variety of augments, not infrequently distortive, as to become scarcely recognizable at first or second sight.

While this definition cannot be rigorously applied to some of the Iroquoian types of this motive, Dr Speck does well to consider them merely as modified forms, since they, too, consist of two curved elements arranged in the symmetrical manner common to decorative designs.

In referring to the distribution of this motive, Dr Speck seems to have made a faulty inference. He finds it as the primary unit of design among the northeastern Algonkin, and also occurring among the Iroquois, Delaware, Central Algonkin tribes, Blackfoot, and Plains-Cree. Elsewhere he states:

> The motive in this region is so strong that it has been conveyed to Oklahoma by the central Algonkian tribes who have moved there, and it is now to be seen in the art of the Osage, Kansa, and other southern Plains tribes (p. 14).

We may well ask why this trait is found only among the Siouan tribes, the Winnebago, Iowa, Osage, and Kansa, as Dr Speck notes, and some Mississippi Siouan, who have been in contact with the Central Algonkin in their historical habitat, and not among other and non-Siouan southern Plains tribes, such as the Kiowa and Comanche? It can only be that this is but one of the many cultural traits that these Siouan tribes have borrowed from the Central Algonkin; a proceeding that has been carried to such a high degree that they may be called "Algonkinoid-Siouans."

Dr Speck has found an areal differentiation of the double-curve motive. The areas may be briefly characterized as follows: Naskapi area, a distinctive type, with the curves sweeping down and outward, with a cross-bar at their point of origin, and also quite generally the trilobed figure at this point; Micmac area, a rectangular form of the motive; Northwestern area, the double-curve subordinated to floral designs; Central Algonkin area, a broadened form of the double-curve; and the Iroquoian area, with a curved figure somewhat resembling the double-curve, but with the curves often turned outward instead of inward. In interpreting this differentiation the author offers two hypotheses.

> What the origin and history of the double-curve design may have been it seems unsafe to say. It occurs most abundantly and is most characteristic among the extreme northern and eastern Algonkian tribes. Since it is restricted to them as a fundamental motive, it may be regarded from two points of view: it may have originated in the northeast and drifted westward, or it may have been derived from an original old American design element that became remodelled and specialized to its present form among some of these tribes and was subsequently adopted by their neighbors in general. The latter supposition seems a little more plausible (p. 2).

However, the fixity of the motive in the northeastern Algonkin area, and the many variations occurring on the borders of this area lend a high degree of probability to the first alternative. Indeed, the author's final statement is as follows:

> In conclusion it seems reasonable to suggest from the material at hand that we have, in the double-curve motive, an originally non-symbolic decorative element, a presumably indefinite plant or floral figure, common to all the members of the northeastern Algonkian group both north and south of the St. Lawrence. Passing from this primary area, the motive has been borrowed by other tribes westward, mostly Algonkian, and subjected to local modification (p. 17).

We have still left on our hands a further problem: that of the rela-

tion of this motive to the *whole* art of the Woodlands area. We have among the Algonkin two art centers, that of the northeastern Algonkian tribes, already characterized, and that of the Central Algonkin, where highly developed floral motives hold the field. Further, in both of these areas we find two design techniques, on textiles executed by women, and on bark by men. These bark designs are highly realistic in both areas, and it has been suggested that the birchbark realistic art of the Central Algonkin has been carried over into the realm of textiles with a consequent effect on the designs used in that technique. As Dr Speck has collected some exceedingly interesting data on the birchbark designs among the northeastern Algonkin, we await with interest his interpretation of their influence on textile design in that area.

LESLIE SPIER

On the Shell Heaps of Maine. By F. B. LOOMIS and D. B. YOUNG. (American Journal of Science, IV, Vol. XXXIV; No. 199, July, 1912, pp. 17–42.)

This paper deals with the remains found by excavation of shell heaps on the Maine coast, "one half of the time being devoted to a careful survey of one heap on Sawyer's Island, near Boothbay, the second month being spent in a more rapid investigation of several heaps for comparison."

After stating that shell heaps are found along the coast from Maine to New York City (and to Florida and beyond, the authors might have added) we are given an account of the careful study of the Sawyer's island shell heap. "Finds" are defined for us in a discriminating manner (p. 19), and the careful record of their occurrence is given in tabular and graphic form. Six layers, alternately of ashes and shells are shown in the typical sections of the shell heaps. The authors deduce from the rather inconclusive evidence of the occurrence of the lowest layer as "clear ashes," that "those camp sites were used for a long time before the habit of eating molluscs was acquired." But this deduction is open to doubt until an explanation is forthcoming as to the *raison d'être* of similar ash layers between strata of shells. In this connection, the diagram of a section of the Sawyer's Island heap (p. 21) showing the distributing finds would be improved by the addition of lines indicating the position of the several layers, that their relation to the strata of relatively abundant remains might be made clear. From a general consideration of the remains in the heaps, particularly the number and types of bone implements, it would appear that the camps were occupied for hunting and fishing, the occupation seasonal, and the use of particular food-animals

being dependent on their availability only. The heaps were evidently completed before the advent of the whites.

A large part of this paper is given to an enumeration of the food-animals used by the inhabitants of these camp sites. The authors point out the interesting feature that all but one of the deer crania belonged to individuals which had recently shed their antlers: that is, they had been killed in the spring. With regard to the skeletal remains of the dog, we are told that, "the peculiar build and constant differences in size have led us to designate them as three breeds, which we believe date back a long period of time for their origin, and then from some of the wolves" (p. 25).

More than half of the varieties of tools discovered were of bone: harpoon points, fish-hooks, awls, etc. The absence of the bone arrow-point is noted. The types of stone implements are few, arrow-heads, knives, celts, scrapers, pestles and hammer-stones, the shell heaps lacking many typical New England Algonkian forms. All of them contained potsherds: "the pots were of the tall round-bottomed type, characteristic of the New England Algonquins." While the type of pot shown in Fig. 11 is undeniably typically Algonkian, one could hardly characterize it as being "round-bottomed." These were built up by superimposing tier on tier of clay, a peculiar method if actually so. They were ornamented, in all cases, with stamped impressions.

It would appear that the chief interest of the authors lay in the relation of the aborigines to the food-animals: a relation which they have admirably determined. The fault in this paper, however, lies, not in the work accomplished, but in the presentation of results. Without doubt, the sweeping conclusions reached by the authors are due to a lack of proper correlation of these with other New England Algonkin data.

LESLIE SPIER

Notes on Chasta Costa Phonology and Morphology. By EDWARD SAPIR. (University of Pennsylvania, The University Museum Anthropological Publications, Vol. II, No. 2, pp. 265–340.) Philadelphia, 1914.

Dr E. Sapir achieved lately what the French could not help calling a veritable *tour de force*. Enlarging upon linguistic material incidentally derived from an Indian, mere bits of an aboriginal language which would not fill one common-sized page, he managed to write in explanation of the same no fewer than sixty-seven pages of first-class philological literature. His *Notes on the Chasta Costa Phonology and Morphology*, are perfectly illuminating, and betray not only a very keen ear but a

quite creditable analytic acumen. After thirty-two-years' study of the Dené group of languages, to which his "Chasta Costa" belongs, I am tempted to pronounce Dr Sapir's essay one of the most satisfactory monographs of its kind ever issued on any of the southern Dené languages.

The work does not pretend to be more than mere notes, and so far as completeness is concerned it could not compare with more elaborate productions already published on the Hupa and Navajo dialects. Some might also object to the graphic signs the author has resorted to in transcribing his texts and disapprove of the strange appearance which sometimes results therefrom. His own language might furthermore have been simpler and less Hellenic or Latin in complexion. But I maintain that, with few unimportant exceptions, he has grasped and faithfully rendered not only the phonetics but the morphology of an idiom whose intricacies must be above the average, unless it be not Dené.

I note with special satisfaction in his paper those particular sounds, such as the aspirated *t*'s and *k*'s, as well as the lingual and glottal explosions, which I had always thought, and sometimes asserted, must exist in the southern Dené languages, in spite of the inability of former students to perceive them or of their carelessness in noting down their texts—a presumption for which I was even taken to task.

These are as many essential points of the Dené phonetics, so very essential, indeed, that I felt they could not possibly be missing in any dialect claiming relationship to the Dené languages of the North. In Dené the vowels are the flesh of the body: they vary according to the dialect in the same way as the flesh is different in quantity or texture according to the individuals. The consonants are the bones of its make-up, therefore much more important, homogeneous, and persistent, while the grammar may be compared to the arteries, without which blood, that is life, could not circulate therein. But the "clicks" which affect letters or groups of letters are the very nerves which alone enable the Dené body to stand.

I have so often insisted on this point that this simple remark must suffice. I may nevertheless be pardoned for confessing a feeling of satisfaction at seeing my contention of former years borne out by the researches of the latest investigator in the southern field.

Only a very few hiatuses seem to have escaped the notice of Dr Sapir, and I am all the more free to call his attention to this point, as throughout his paper he seems animated by that sense of diffidence which behooves a genuine scholar who enters a new field with the knowledge that he is more of a philologist than of a linguist. Moreover, a mere passing

acquaintance with a language cannot, of course, shield one against possible oversights.

I shall therefore make bold to remark that in Déné the desinential radicals of the verbs of vision (-ˑ*i*, -ˑ*in*, -ˑ*en*) are immediately preceded by a stop, or hiatus, which prevents them from being merged into the consonantal element of the pronoun. Thus I do not think I am mistaken when I observe that in *nêłī*(l), "you are looking at him" (*nilˑen* in Carrier), the desinence -ī must be separated from the preceding *ł* by a hiatus, which should be shown on paper as prominently as it is expressed by the native speaker.

The same remark applies to *γîīn* (Carrier *yîˑen*), *at*, 'wife' (Carrier and Chilcotin *ˑat*), as well as to the verb ALAZ, 'he sneezes,' which, barring the medial *l* and final *z*, is the exact equivalent of the Carrier *æłˑæs* (same signification).

This hiatus plays a double rôle in the North. While at times it merely cuts asunder, as it were, articulations which would otherwise coalesce into one sound (*nilˑen*, i. e., *nil* + *en*, not *ni-len*), or is prefixed to monosyllables often expressive of distance, remoteness, or even repulsion (ˑ*æn*, Chasta Costa AN); it also denotes the disappearance of a weak vowel through contact with a stronger one. Thus the indicative present of the verb "to work" is *æs ẹn* in Carrier, and, normally, its pronominal element *æs* should be developed into *æzæs* in the negative. But the *e* of the negative particle *le* is stronger than the initial *æ* of *æzæs;* hence the negative of *æsṭen* is merely *leˑzæsṭen*, the hiatus (ˑ) standing here for the vanished *æ*.

The same happens even when a stronger desinential vowel of a word comes in contact with a weaker initial vowel of another. Example: *spaˑ hutqa huni*, 'I am lucky indeed' (for *spa æhutqa huni*, literally, me-for it-has-happened it-is-so).

The consonant *q* reminds me of Dr Sapir's *dj*. If my own letter represents the same sound which that gentleman has in mind when he uses his double consonant, I must be allowed to object to the latter as misleading. Pronounce it as you will, you are bound to have a double operation of the tongue and mouth when you utter the sound *dja*, the dental one being always distinct from that caused by the fricative *j*, whilst in pronouncing the sound I render by *q* but one operation is needed.

Were one bent on ultra-criticism, he might remark that in Déné all such parts of the body as are naturally twofold are normally dual in meaning, the singular being formed by suffixing a syllable which is

generally synonymous of our word 'half' (*i. e.*, half of two = one). According to this rule Dr Sapir's *hwă* must not mean foot, but feet, in the same way as his *la* should be translated hands, not hand.

Dr Sapir's analysis of the short text which closes his essay is simply admirable, and betrays an insight into the morphology of his material which one is at a loss to know where, or how, it was acquired. Scarcely more than one criticism have I to offer on this part of his paper. The last syllable of the compound *dō-at-ţi* is not a "noun suffix," as he believes (30). It is a regular verb, or rather a verbal stem, since the pronominal element of the same has disappeared through the process of word formation. *Dō* is the Carrier negation *au*, the Babine *so'*, Chilcotin *tla*, Sekanais *ussé*, Nahanais *œtû*. These particles or words can, in the North, conveniently be omitted in many cases. They are the equivalents of the French *ne . . . pas*. *'At*, as we have seen, means "wife"; *-ţi* is the root of the verb *œţi*, "he has."

This is about the sum total of the criticisms I have to make on that author's rendering and interpreting of the southern dialect he introduces to the philological world.

ADRIAN G. MORICE

ASIA

Some Fundamental Ideas of Chinese Culture. By BERTHOLD LAUFER, PH.D., Associate Curator of Asiatic Ethnology, Field Museum, Chicago. (Reprinted from *The Journal of Race Development*, Vol. 5, No. 2, October, 1914, pp. 160–174.)

It is a matter of great regret that Dr Laufer's writings are so little known among Americanists and ethnologists generally. However specialized researches into the civilization of nations possessing a written literature may have become, there is surely no difference in principle between studying the culture of primitive and of civilized populations, and the ethnologist might reasonably expect valuable suggestions from the historian, the Egyptologist, the sinologue, *et al.* The sources of information of these scholars appear of higher authenticity than the oral traditions recorded in the course of ethnological field-work, and at all events promise a better chronological insight into the actual growth of cultures. Unfortunately we are often disappointed in these hopes through the fact that the student of higher cultures is not imbued with the anthropological point of view: too often he naïvely assumes "theories that are now gracing only the refuse heaps of the modern anthropologist's laboratory"; too often he remains ignorant of avenues of approach successfully trodden by modern ethnologists. As a striking illustration

we may cite the lack of criticism with which speculative afterthoughts are frequently taken at their face value,—as trustworthy accounts of the actual origin of institutions. The distinctive value of Dr Laufer's work lies in the fact that he combines the erudition of the Orientalist with the spirit of latter-day ethnology, which he applies with originality, rare judgment, and unusual psychological insight to the problems of his chosen field. Readers of the *American Anthropologist* need only be reminded here of Dr Laufer's independent "Theory of the Origin of Chinese Writing" that appeared in this Journal in 1907 (pp. 487–492); of the pregnant general remarks scattered through the monograph on *Jade* (Chicago, 1912); and the interesting discussion of convergence in his *Dokumente der indischen Kunst*, I (Leipzig, 1913).

In the paper now under consideration Dr Laufer briefly outlines the general characteristics of Chinese culture. It would be difficult to compress more solid and suggestive information within the narrow compass of fifteen pages. Dr Laufer, dismissing the "Monroe doctrine" of sinologues, that Chinese culture is a purely indigenous product, establishes its relations with other cultures. He clearly distinguishes a northern and a southern culture area. The former is characterized by the use of the plough and ox in the cultivation of wheat, barley, and millet, while the southern farmer plants rice with the aid of the hoe and water-buffalo characteristic of southeastern Asia. In the north there are highways, and travel is by two-wheeled carts drawn by mules, while the horse, donkey, and camel are found as pack-animals and for transportation; in the south there are rivers and canals, and travel is by boat and sedan-chairs. The northern populations show cultural contact with Tungus and Turkish tribes, while the south was influenced by the Indian and Malayan cultures. It is the northern Chinese culture that shares traits of the greatest significance with the early Sumero-Babylonian and Indo-Iranian cultures. The common possession of certain cereals, of the plough and the ox, of wheeled vehicles, of the composite bow, and of the potter's wheel, indicates "that in an undefinable pre-historic age a great universal and uniform culture-type must have existed in the northern or central hemisphere of the Old World, in strong contrast with the cultures of all primitive tribes which we encounter in the rest of Asia, in Africa, and in America" (p. 164). This, the author hastens to assure us, does not imply that primeval Chinese culture was simply a wholesale importation from the West, but does prove that it cannot be considered "the product of an isolated seclusion." On the other hand, there is strong evidence that "as early

as prehistoric times the Chinese must have undergone a development during several thousands of years entirely independent of any Western influence" (p. 167). In this connection Dr Laufer emphasizes a negative trait,—the fact that the Chinese, like the Koreans, Japanese, Indo-Chinese, and Malayans, do not use animal milk for food, which constitutes a significant difference from the Semites, the ancient Scythians, the Indo-Europeans, Turks, Mongols, and Tibetans (pp. 167–169). Another significant negative feature consists in the non-utilization of sheep and goat wool for clothing, this being an art taught to the Chinese in historical times by the nomadic peoples of inner Asia. A curious adhesion, in Tylor's sense of the term, is that of epic poetry and milk-consumption, those tribes abstaining from milk being likewise deficient in epic literature (p. 170).

However, it is impossible to cite all the interesting data in Dr Laufer's paper without quoting or paraphrasing it in its entirety.

ROBERT H. LOWIE

Aberglaube und Volksmedizin im Lande der Bibel. By T. CANAAN. Hamburg: L. Friederichsen & Co., 1914, pp. xii, 153, large 8°. With 6 plates and 50 text figures. (Abhandlungen des Hamburgischen Kolonialinstitutes, vol. XX.) Price 6 m.

The author of this work is a physician of Jerusalem who was born and lived among the people whose beliefs, modes of thought and practices he depicts. At the same time he is fully abreast of Western science and familiar with modern methods of observation and analysis, having received his education in Europe. He had therefore the equipment and opportunities of studying the habits of the natives and penetrating the innermost recesses of their motives and thoughts rarely, if ever, granted to an outsider.

After an introductory chapter which briefly describes the domestic conditions of the peasants (fellahins) and their utter disregard of hygienic rules, the views of the natives on the causes of sickness and its handling are treated in eight chapters under the heads of etiology; diagnosis; prognosis; the healers; prophylaxis; vows, and the treatment of disease. The three principal causes of sickness are: (1) Spirits or demons who are everywhere, in fact they fill out the space between heaven and earth and are organized in several hierarchies with princes at their head; (2) the evil eye, which again lurks everywhere, as its baneful potency is due to a poisonous substance inherent in all men which emanates through the eye, working its mischief unwittingly and unconsciously, even animals not being

immune from its destructive effects; (3) the evil soul, secretions of dangerous influences from one's soul which pass through the breath of evil-minded people. Secondary causes are the four temperaments in conjunction with the four elements, the planets and the constellations of the zodiac. Then there are malformations, due to the ungratified appetites of the pregnant women, congenital defects, and the harmful supernatural potencies and influences of a woman during the monthly period and in childbirth. The diagnosis and prognosis is established by means of a sort of lots and kylico-mantic and through dreams. Thus the appearance of a snake in dream heralds recovery because of the resemblance, in Arabic, of the name for snake (*haye*) with the word for life (*haya*). For the same reason silver in dream is of good omen (*fiddha*, silver, and *fadha*, light), while the vision of gold, having yellow color of death, forebodes the approach of sickness or of death. The healers are accordingly in the first place holy persons—sheikhs, dervishes and priests, and then "experienced" persons—barbers, old women, midwives, snake conjurers, and in the prophylaxis and therapeutics amulets and talismans of all kinds play the principal part.

The limits of space prohibit a detailed discussion of the contents of the monograph of Dr Canaan, but even the few hints given above will suffice to show that the inhabitants of Palestine—and this holds good for the entire Orient, as Professor C. H. Becker of Bonn states in his introduction—are still under the sway of primitive animism, demonology and magic, and their theism, whether it be that of Judaism, Christianity or Islam, is merely a thin veneer superimposed upon an animistic and astral pantheism. At the same time they may convey an idea of the valuable work done by Dr Canaan. The 153 pages of his monograph are from beginning to end packed with data and information which are of interest not only to the physician but also to the anthropologist, folklorist and student of the history of religion. A full index of subjects and names and one to the Biblical passages quoted in the book enhance the use of this little thesaurus for reference.

I. M. Casanowicz

AFRICA AND AUSTRALIA

Die Mazigh-völker. Ethnographische Notizen aus Süd-Tunesien. By Dr F. Stuhlmann. Hamburg: L. Friederichsen & Co., 1914, pp. 59, large 8°. With 10 plates (2 colored) and 18 text figures. Price 5 m.

Dr Stuhlmann's 'notes' are the fruit of his observations during a trip through southern Tunis in 1913, and are supplemental to a larger

work of his on the Aures, which appeared in vol. x of the same series. Mazigh is the indigenous name of the people otherwise known as Berbers who are settled in Tripolitania as far as the extreme west of Morocco and south to the confines of the Tuaregs. Their language, which has been largely supplanted by Arabic, is called Tamazight. Ethnologically and culturally they represent a homogeneous people, though politically they have never been united. The observations of Dr Stuhlmann extended over the agricultural implements; bakeries; the production of oil; waterworks; distilling of perfumes; the potteries; smithing; weaving of cloth, sieves and mats; dress and ornaments, including tattooing, and habitations. Some of these industries, as for instance the manufacture of pottery and textiles, are discussed in great detail.

The typographical features of these monographs, both as regards the illustrations and the letter press are unsurpassed, worthy of the Kolonialinstitut and a credit to the publishers.

I. M. Casanowicz

Native Tribes of the Northern Territory of Australia. By Baldwin Spencer. Macmillan and Co., Limited: London (The Macmillan Co., New York), 1914. 516 pp., 92 figs., 36 pls. (8 colored), 1 map.

Professor Spencer's latest book is a worthy successor to his and Mr Gillen's volumes on Central and Northern Australia, which indeed it surpasses in point of make-up, the reproductions of photographs on special paper being much more effective than those on the former system of running them in the text. Much of the field research of which the results are embodied in this publication belongs to the category of what Dr Rivers has called "survey work." Professor Spencer had to deal with no less than forty-odd distinct tribes and naturally he has been able to acquire only a passing acquaintance with the majority of them. Under these circumstances he has wisely chosen to emphasize the geographical distribution of various cultural elements, such as types of social organization and of initiation ceremonies. A longer stay enabled him to gain a deeper insight into the life of the Kakadu and the natives of Bathurst and Melville islands. His discussion of these cultures is especially interesting because of their strikingly anomalous character. Thus, the decorative art of the Islanders differs so markedly from that of the mainland as to suggest contact with non-Australian populations (p. 407 f.), and the rock and bark drawings of the Kakadu and kindred aborigines represent the high-water mark of autochthonous artistic effort (p. 439). In another field of culture the Islanders present a

curious departure from Australian custom in not barring women and children from participation in initiation ceremonies; and the bull-roarer that usually accompanies the rites tabooed to the uninitiated seems to be wholly lacking (pp. 91–92). It is very interesting to find that among the Waduman the totem name descends in the maternal line, while the class name is inherited through the father (p. 195); this double arrangement recalls such classical instances as the Herero of South Africa and the Yuchi of North America.

It is of course impossible to allude here to all the important new data recorded in so extensive and valuable a descriptive account. From the point of view of arrangement little can be suggested by way of improvement since the great number of tribes discussed renders necessary a topical, synoptic treatment. Probably most readers, however, would prefer to see Totemic Systems dealt with, either in connection with, or directly following, Social Organization.

There is only one criticism that must be made from a theoretical point of view. Professor Spencer, like Dr Frazer, confounds primitive man's tendency to speculate about existing institutions with the power of speculation to create new social institutions (p. 62 f.). No one among modern ethnologists doubts that explanations of all sorts develop among the more metaphysically minded members of primitive tribes; hence there is no skepticism as to the ability of an Australian philosopher to deliberate on his own eight class-system or to compare it with alien systems. What practically every thinking anthropologist denies is that the system *originated* in the ratiocinations of a thinker or group of thinkers, because the evidence hitherto adduced for such a process is pathetically irrelevant.

ROBERT H. LOWIE

SOME NEW PUBLICATIONS

Abreu, C. de. rã-txa hu-ni-ku-ĩ, Grammatica, Textos e Vocabulario Caxinauás. Rio de Janeiro: Lenzinger, 1914. Pp. 630.

Carolidis, P. Bemerkungen zu den alten kleinasiatischen Sprachen und Mythen. C. F. Schmidt: Strassburg, i. E., 1913. 8°, 216 pp.

Charpentier, Jarl. Kleine Beiträge zur indoiranischen Mythologie. (Uppsala Universitets Arsskrift 1911). Pp. 87.

Finsch, Prof. Dr. O. Südseearbeiten; Gewerk-und Kunstfleiss, Tauschmittel und "Geld" der Eingeborenen auf Grundlage der Rohstoffe und der geographischen Verbreitung. (Abhandlungen des Hamburgischen Kolonialinstitutes, Band XIV.) Price M. 20, cloth M. 25. Hamburg: L. Friederichsen & Co., 1914. Gr. 8°. xii, 605 pp. 584 ills. on 30 pls., 2 colored.

Goddard, Pliny Earle. Dancing Societies of the Sarsi Indians. (Anthropological Papers of the American Museum of Natural History. Vol. XI, Part V, pp. 461–474.) New York, 1914.

Grubauer, Albert. Unter Kopfjägern in Central-Celebes. Voigtländers Verlag, 1913. Pp. xi, 608. 322 ills., 16 pls., 2 maps.

Hatt, Gudmund. Arktiske Skinddragter i Eurasien og Amerika. En Ethnografisk Studie. Copenhagen: J. H. Schultz, 1914. Pp. 255, 16 pls.

Hüsing, G. Beiträge zur Rostahmsage (Saijid Battal). Mythologische Bibliothek, v, 3. Hinrichs: 1913. Pp. xv, 69. (Price M 3.)

Joyce, Thomas A., M.A. Mexican Archæology. An Introduction to the Archæology of the Mexican and Mayan Civilizations of Pre-Spanish America With many illustrations and a map. London: Philip Lee Warner (7 Grafton Street W.), 1914. Pp. xvi, 384. (Price 12s. 6d. net).

Kläsi, Ed. Der malaiische Reineke Fuchs und anderes aus Sage und Dichtung der Malaien. Frauenfeld, 1912. 8°, pp. xiv, 193.

Saintyves, P. La force magique. Du mana des primitifs au dynamisme scientifique. Paris: Emile Noarry (62 Rue des Ecoles), 1914. Pp. 136.

Skinner, Alanson. Political Organization, Cults, and Ceremonies of the Plains-Ojibway and Plains-Cree Indians. (Anthropological Papers of the American Museum of Natural History. Vol. XI, Part VI, pp. 475–542, 10 figs.) New York, 1914.

Smith, Harlan I. The Archæological Collection from the Southern Interior of British Columbia. (Museum of the Geological Survey, Canada: Archæology.) Ottawa: Govt. Printing Bureau, 1913. iv, 40 pp., 3 figs., 16 pls.

Wilson, Gilbert L. Goodbird the Indian. His story, told by himself. Illustrated by Frederick N. Wilson. (Issued under the direction of the Council of Women for Home Missions.) New York, Chicago, Toronto: Fleming H. Revell Co., 1914. 80 pp.

von Zeltner, Fr. Contes du Sénégal et du Niger. Paris: Leroux, 1913. (Collection de contes et chansons populaires, tome 40.) Pp. iv, 252.

PROCEEDINGS OF THE AMERICAN ANTHROPOLOGICAL ASSOCIATION FOR 1914

By ROBERT H. LOWIE[1]

The annual meeting of the American Anthropological Association was held at the University Museum, Philadelphia, December 28–31, 1914, in affiliation with the American Folk-Lore Society and Section H of the American Association for the Advancement of Science. On the first two days Professor Roland B. Dixon presided; the morning session of December 30 was held under the auspices of the Folk-Lore Society, with Dr P. E. Goddard in the chair, while the afternoon meeting was conducted by Section H under the vice-presidency of Professor Pillsbury; on December 31 Dr George B. Gordon, as vice-president of the Association, took the chair in the absence of Professor Dixon. The Association had the pleasure of welcoming Geheimrat Professor Felix von Luschan of the University of Berlin, who delivered a lecture on *Convergency*.

The address of the retiring vice-president of Section H, Professor Pillsbury, on "The Function and Test of Definition and Method in Psychology" was published in *Science* March 12, 1915; Dr Goddard's presidential address before the Folk-Lore Society on "The Relation of Folk-Lore to Anthropology" will appear in *The Journal of American Folk-Lore*.

The following additional papers were presented: E. Sapir, †"The Nadene Languages"; A. A. Goldenweiser, *"The Knowledge of Primitive Man," and †"Sociological Terminology in Ethnology"; N. C. Nelson, †"Chronological Data on the Rio Grande Pueblos"; R. H. Lowie, *"Exogamy and the Classificatory System." James R. Nies, "Anthropological Evidence contained in some Cuneiform Signs"; Charles Peabody, "Notes on Prehistoric Palestine and Syria"; Byron Cummings, *"Kivas of the Cliff Dwellers in the San Juan Drainage"; George G. Heye and George H. Pepper, "The Exploration

[1] Acting Secretary in place of Professor George Grant MacCurdy, whose illness prevented his attendance.

[2] Titles preceded by (*) will be found printed in full in this number; those marked (†) will appear later in this volume.

of a Delaware Burial Place near Montague, N. J."; Stansbury Hagar, †"The Maya Day Sign, Manik"; R. B. Dixon, "Statistics Relating to the Vitality and Fecundity of the American Indian Obtained by the Last Census"; A. B. Lewis, "Prepared Human Heads from New Guinea" and "Some Native Industries from New Guinea"; A. M. Tozzer, "The Excavation of a Pre-Aztec Site in the Valley of Mexico"; *id.*, *"The Work of the International School of Archeology and Ethnology in Mexico for 1913–1914"; Hiram Bingham, *"Types of Machu Picchu Pottery"; *id.*, "Problematical Stone Objects found at Machu Picchu"; *id.*, "Results of Investigations Concerning the History of Machu Picchu"; Marshall H. Saville, "Preliminary Account of Archeological Researches along the Pacific Coast of Colombia"; Adela C. Breton, "Some Pages from the Memorial de Tepetlaostoc and the Painted Map from Metlaltoyuca in the British Museum"; F. Boas, "Demonstration of a Map showing the Dialects of the Salish Languages"; George Hempl, "The Origin of European Alphabetic Writing"; H. J. Spinden, †"Nahua Influence in Salvador and Costa Rica"; Stith Thompson, "European Tales Among the North American Indians"; Phillips Barry, "The Magic Boat"; C. H. Hawes, "Dartmouth College Ethnological Collection"; F. G. Speck, †"The Eastern Algonkin Wabanaki Confederacy"; F. W. Waugh, "Some Comparative Notes on Iroquois Medicine"; T. Michelson, "Notes on the Stockbridge Indians"; *id.*, "Problems in Algonkian Ethnology."

The following papers were read by title: Robert B. Bean, †"The Growth of the Head and Face in American (White), German-American, and Filipino Children"; *id.*, †"Some Ears and Types of Men"; G. G. MacCurdy, "The Passing of a Connecticut Rock-Shelter"; W. J. Wintemberg, "An Iroquoian Site in Eastern Ontario"; Robert Gorham Fuller, "Observations on a Series of Crania from the Stone Graves of Tennessee"; A. L. Kroeber, *"Eighteen Professions"; William H. Holmes, "The Place of Archeology in Human History"; C. Wissler, "The Diffusion of Modern Ceremonies in the Plains Area"; *id.*, "Types of Clothing and their Distribution in the Plains Area"; Reed Smith, "1914 Additions to the Traditional Ballads in the United States"; C. M. Barbeau, "Huron-Wyandot Mythology"; Middleton Smith, "The Psychology of Humor, Wit and Ridicule"; Charles W. Furlong, "The Tribes of the Fuegian Archipelago"; A. B. Skinner, "Ethnology of the Eastern Dakota"; J. R. Swanton, "The Creek Clans and the Square Ground"; P. Radin, "On the Relationship of the Languages of Mexico"; *id.*, "Literary Aspects of North American Mythology."

Report of the Secretary

No meeting of the Association has been held since the last annual meeting in New York City, the report of which was published in the *American Anthropologist* for January–March, 1914. The Executive Committee, however, has taken action on an important matter by voting to discontinue the publication of *Current Anthropological Literature* after the appearance of No. 4, Vol. 2, of the series.

The question of distributing a provisional program in advance of the Philadelphia meeting was submitted to members of the Committee on Program, also to President Dixon, Dr Wissler, Vice-President of Section H, and Mr Hyde, Treasurer of the Association. With but one opposing vote it was decided not to invest in a provisional program and leave the final program to be incorporated in the general program issued by the American Association for the Advancement of Science without expense to our Association.

During the year losses in membership through death have been serious indeed: Alexander F. Chamberlain, Professor of Anthropology in Clark University; Robert C. Hall of Pittsburgh, and Professor N. H. Winchell of St Paul. A sketch of the life and works of Chamberlain appeared in the *American Anthropologist* for April–June, 1914.

Once more the Secretary appeals to all members of the Association to coöperate in offsetting the losses due to death and other sources by proposing new names for membership. Applications,[1] thirteen in number, are herewith submitted for election as follows:

A. H. Dewey, Rev. G. P. Donehoo, R. G. Fuller, C. W. Furlong, Dr G. Hatt, L. Havemeyer, M. C. Keith, Marian Vera Knight, G. Landstrom, P. A. Means, Mrs M. L. La Moreaux, Dr Joe. S. Wooten, Dr Paul Radin.

The Secretary has represented the Association at the annual meeting of the American Year Book Corporation as a member of the Supervisory Board, also as a contributor to *The International Year Book* (D. Appleton & Co.) for 1914.

Council Meetings

Two council meetings were held, on the afternoons of December 29 and 31, respectively. Those present Dec. 29 were: R. B. Dixon, H. J. Spinden, A. A. Goldenweiser, T. Michelson, P. E. Goddard, A. M. Tozzer, F. Boas, J. W. Fewkes, Marshall H. Saville, C. H. Hawes, W. D. Wallis, J. R. Swanton, F. G. Speck, E. Sapir, R. H. Lowie. The meeting

[1] Full addresses are given in the list of members printed elsewhere in this issue.

of December 31 was attended by G. B. Gordon, F. Boas, P. E. Goddard, T. Michelson, E. Sapir, A. A. Goldenweiser, F. G. Speck, H. J. Spinden, W. D. Wallis, C. Peabody, R. H. Lowie.

December 29. After the roll call Professor Boas moved that the Council ratify the Secretary's recommendation, that Dr R. H. Lowie be delegated to act as Secretary for the time of the meeting. Passed. The Acting Secretary then read the Secretary's Report which was accepted, all the candidates for membership being elected by acclamation.

In the absence of the Treasurer's Report it was moved that the Chair appoint a committee for the purpose of communicating with the Treasurer and reporting on the subject to the Council. This was passed, and President Dixon appointed F. Boas, P. E. Goddard and A. A. Goldenweiser to serve on this committee. (It appeared later that the Treasurer's Report had been sent to Philadelphia, but had miscarried owing to wrong directions.)

There was no report from the Editor, the Associate Editors, or any of the standing committees.

The Chair then appointed the following committee on nominations to report at the next meeting of the Council: F. Boas, J. R. Swanton, P. E. Goddard. As Dr Swanton was obliged to leave for Washington, A. M. Tozzer was subsequently appointed to take his place.

The Acting Secretary submitted a letter from Professor A. L. Kroeber relating to the proposed special meeting of the Anthropological Association on the Pacific coast. F. Boas moved, and it was passed, that such a meeting be held in San Francisco, Aug. 2–7, in affiliation with Section H of the American Association for the Advancement of Science.

Under the heading of new business, the Secretary of the Committee on Phonetics, Dr E. Sapir presented an abstract of the Committee's report. On motion of F. Boas it was decided to instruct the Committee to print the report in full in whatever place or manner seemed to its members most appropriate.

It was moved and carried that the Secretary be instructed hereafter to print the program for the meetings of the Association and distribute it among the members prior to the meeting.

Professor Hiram Bingham moved that a Committee of three be appointed to outline a fixed terminology for pottery forms. This was carried, and Professor Dixon appointed Messrs Peabody, Bingham, and Fewkes.

December 31. After the roll call the minutes of the previous meeting were read and adopted. The Acting Secretary read from a letter from

the Secretary proposing for membership the name of Professor Fehlandt of Ripon, Wisconsin. Professor Fehlandt, having been duly indorsed, was unanimously elected to membership.

In reponse to a letter from Professor Kroeber, his action in organizing the program for the San Francisco meeting was formally approved by the Council.

The report of the Nominating Committee was then read by the Acting Secretary. In order to make the Committee's recommendation legal, F. Boas proposed that the number of councilors in each class be increased from nine to eleven, the object being to permit all active anthropologists to participate in the deliberations of the Council. This was passed.

The Committee on Nominations presented the following candidates, for all of whom the Acting Secretary was instructed to cast a single ballot:

President: F. W. Hodge, Bureau of American Ethnology.
Vice-President, 1915: Clark Wissler, American Museum of Natural History.
Vice-President, 1916: A. L. Kroeber, University of California.
Vice-President, 1917: George B. Gordon, University of Pennsylvania.
Vice-President, 1918: Berthold Laufer, Field Museum of Natural History.
Secretary: George Grant MacCurdy, Yale University.
Treasurer: B. T. B. Hyde, New York.
Editor: Pliny E. Goddard, American Museum of Natural History.
Associate Editors: J. R. Swanton, R. H. Lowie.
Executive Committee: (In addition to the President, Secretary, Treasurer, and Editor, *ex-officio*), A. M. Tozzer, E. Sapir, J. W. Fewkes.
Council: F. W. Putnam, F. Boas, W. H. Holmes, J. W. Fewkes, R. B. Dixon, F. W. Hodge, Clark Wissler, A. L. Kroeber, George B. Gordon, B. Laufer, G. G. MacCurdy, B. T. B. Hyde, P. E. Goddard (*ex-officio*); A. E. Jenks, S. A. Barrett, W. Hough, A. Hrdlička, A. M. Tozzer, F. G. Speck, A. A. Goldenweiser, E. A. Hooton, A. V. Kidder, F. C. Cole (1915); Byron Cummings, G. H. Pepper, W. C. Farabee, J. R. Swanton, G. G. Heye, H. J. Spinden, T. T. Waterman, C. M. Barbeau, W. D. Wallis, A. B. Lewis, Stansbury Hagar (1916); W. C. Mills, H. Montgomery, C. B. Moore, W. K. Moorehead, C. Peabody, C. C. Willoughby, T. Michelson, A. B. Skinner, M. H. Saville (1917); Alice C. Fletcher, C. P. Bowditch, S. Culin, R. H. Lowie, C. H. Hawes, E. Sapir, N. C. Nelson, H. Bingham, J. A. Mason, G. A. Dorsey, E. W. Gifford (1918).

Since the meeting the incoming President, Mr F. W. Hodge, has appointed the following committees:

Committee on Program: George Grant MacCurdy (chairman), Roland B. Dixon, Alice C. Fletcher, Aleš Hrdlička, Albert E. Jenks, A. L. Kroeber, Berthold Laufer, Clark Wissler.

Committee on Finance: B. T. B. Hyde (chairman), Edward E. Ayer, Charles P. Bowditch, William H. Furness, George G. Heye, Clarence B. Moore, Charles Peabody, Homer E. Sargent.

Committee on Policy: F. W. Putnam (chairman), Franz Boas, Roland B. Dixon, J. Walter Fewkes, W. H. Holmes, Robert H. Lowie.

Committee on Publication: F. W. Hodge (chairman *ex officio*), Hiram Bingham, Stewart Culin, P. E. Goddard (Secretary *ex officio*), A. A. Goldenweiser, G. B. Gordon, Walter Hough, A. L. Kroeber, Berthold Laufer, E. Sapir, M. H. Saville, John R. Swanton, A. M. Tozzer.

F. Boas offered a resolution, unanimously adopted, that a Committee be appointed by the chair to express the recognition by the Association of Mr F. W. Hodge's services. The Chair appointed Drs Boas, Goldenweiser, and Lowie.

P. E. Goddard moved that a telegram, to be signed by the Chairman and Acting Secretary, be sent to Dr George Grant MacCurdy, for the purpose of expressing the regret of the members at his illness. Passed.

On suggestion of P. E. Goddard it was moved and carried that a rising vote of thanks be extended to Dr G. B. Gordon and the University Museum for their hospitality to the Anthropological Association during the period of the meeting.

It was moved and carried that the place of the next meeting be referred to the Executive Committee with power to act.

AMERICAN MUSEUM OF NATURAL HISTORY
NEW YORK

REPORT OF THE TREASURER

RECEIPTS AND DISBURSEMENTS, 1ST JANUARY, 1914, TO 28TH FEBRUARY, 1915

Receipts

Anthropological Society of Washington: *American Anthropologist*, Vol. XV, No. 3		$ 57.40	
American Ethnological Society, New York: *American Anthropologist*, Vol. XV, No. 3		54.00	
American Folk-Lore Society, Boston: *Current Anthropological Literature:*			
Vol. II, No. 2	$191.77		
No. 3	195.54		
No. 4	168.55		
	555.86		
Seven Twelfths proportion of above		324.25	$ 435.65

Brought forward		$435.65	
Dues and Subscriptions:			
On account of 1913		4.50	
1914	988.75		
Less Commissions	4.00	984.75	
1915	428.25		
Less Commissions	29.00	399.25	
Miscellaneous Collections		410.46	
Total receipts for the period			2,234.61
Balance from 1913			467.06
Total funds available for the year			2,701.67

Expenditures

For Printing, Binding, and Mailing *American Anthropologist:*			
Vol. XV, No. 3	$567.22		
Vol. XV, No. 4	498.06		
Vol. XVI, No. 1	409.50	$1,474.78	
Less printing bill unpaid		267.88	$1,206.90
For printing, binding, and mailing *Current Anthropological Literature:*			
Vol. 2, Nos. 2, 3, 4		555.86	
Illustrations for *American Anthropologist*		273.42	
Treasurer's Expenses		93.55	
Secretary's Expenses		147.25	
Editor's Expenses	184.70		
Less bill of Tuttle, Morehouse, and Taylor (unpaid)	5.00	179.70	
Subscription Expense		32.45	
Exchange		3.40	
Total expended			$2,492.53
Balance of cash on hand 28th February, 1915			209.14
			$2,701.67

B. T. BABBITT HYDE,
Treasurer.

Examined and found correct.
ROBERT H. LOWIE,
P. E. GODDARD,
Auditors.

PROCEEDINGS OF THE AMERICAN ETHNOLOGICAL SOCIETY

The last meeting reported in this journal (*American Anthropologist*, 1902, p. 361 *et seq.*) dates back to December, 1901. During the eight years' interval between that period and the election of the present secretary the customary monthly meetings were held from October until April. Among the distinguished guests who delivered lectures during this period may be mentioned Dr W. Bogoras of the Riabouschinsky expedition and Professor A. C. Haddon (Cambridge). The following are the proceedings of the Society during the incumbency of the present Secretary.

Meeting of January 24, 1910

A meeting of the Executive Committee was followed by the annual meeting of the Society, both held at the American Museum of Natural History, with General Wilson in the chair. Upon recommendation by the Executive Committee, the following officers were elected by acclamation: President, James Grant Wilson; First Vice-President, Franz Boas; Second Vice-President, Marshall H. Saville; Recording Secretary, Robert H. Lowie; Corresponding Secretary, Frederick S. Dellenbaugh; Treasurer, Harlan I. Smith; Librarian, Ralph W. Tower; Executive Committee, the above officers, and Stansbury Hagar.

Professor Franz Boas then delivered a public lecture, illustrated by diagrams, summarizing his recent investigations on "The Changes in the Physical Characteristics of the Immigrants to the United States."

The paper was discussed by Professor Giddings, Dr Tenney, and Dr Fishberg.

Meeting of February 9, 1910

A meeting of the Society was held at the American Museum of Natural History, with Professor Saville in the chair. Professor George Grant MacCurdy, of Yale University, delivered a public lecture, illustrated by lantern slides, on "Some Recent Discoveries bearing on the Antiquity of Man." The lecture was discussed by Professor Saville and Dr Lowie.

Meeting of March 28, 1910

A joint meeting of the Society and the Section of Anthropology and Psychology of the New York Academy of Sciences was held at the

American Museum of Natural History. Mr Paul Radin gave an exposition of "Some Problems of Winnebago Ethnology," on the basis of his field experiences. This was followed by a paper by Mr A. A. Goldenweiser on "Australian Clan Exogamy," embodying the views subsequently published in his "Totemism, an Analytical Study," *Journal of American Folk-Lore*, vol. XXIII, pp. 237–243.

Meeting of April 27, 1910

A meeting of the Society was held at the American Museum of Natural History. Under the title "The Fundamentals of Algonkian Grammar," Dr Truman Michelson presented the results of his study of the late Dr William Jones' linguistic material. (See Michelson, "Preliminary Report on the Linguistic Classification of Algonquian Tribes" in the 28th *Ann. Rept. Bur. Amer. Ethnol.*, also his "Contributions to Algonquian Grammar," *American Anthropologist*, 1913, pp. 470 *et seq.*)

Meeting of October 24, 1910

A joint meeting of the Society and the Section of Anthropology and Psychology of the New York Academy of Sciences was held at the American Museum of Natural History. A paper was read by Dr Robert H. Lowie, who summarized in part his summer's investigations of the "Ceremonial Organizations of the Crow Indians." These the speaker divided into two main groups,—the societies of a more or less sacred character, viz. the Tobacco, Medicine Pipe, and Horse Dance societies; and the military organizations and modern clubs. Initiation into the former involves heavy payments of property, while entrance into the societies of the second class is free. The modern clubs practise the Omaha or Grass Dance, which the Crow call "Hot Dance."

After the paper communications by Drs Frachtenberg, Sapir, and Michelson were presented on their respective researches in Oregon, among the Nootka, and into Algonkin linguistics. A report was also read on the activities of the International School of American Archeology in Mexico.

Meeting of November 22, 1910

A meeting was held at the American Museum of Natural History. Mr Paul Radin presented a paper on "Ceremonial Organizations of the Winnebago Indians." This was followed by the reading of communications from the field by Messrs Teit and Chapman on the interior tribes of British Columbia and the Anvik Athapascans respectively.

Meeting of January 30, 1911

After a meeting of the Executive Committee, the annual meeting of the Society was held in conjunction with the Section of Anthropology and Psychology of the New York Academy of Sciences. A report of the Executive Committee, recommending the re-election of last year's officers, was unanimously accepted. Dr Pliny E. Goddard then presented notes on "Distribution and Relationship of the Apache."

Meeting of February 27, 1911

A meeting was held in conjunction with the Section of Anthropology and Psychology of the New York Academy of Sciences. Dr Robert H. Lowie read a paper on "Women's Societies of the Missouri Village Tribes." The speaker enumerated the graded women's organizations of the Hidatsa and Mandan, and pointed out that while the corresponding series of men's societies was characterized by essentially social and military rather than strictly religious features, the women's organizations were in part of a more sacred character. This applied particularly to the Buffalo Women, whose dance was supposed to entice buffalo to camp, and to the Goose Women, who were associated with corn-growing.

Meeting of March 27, 1911

A meeting was held in conjunction with the Section of Anthropology and Psychology of the New York Academy of Sciences. Dr Paul R. Radosavljevich read a paper on "Cephalic Indices in Relation to Sex, Age, and Social Conditions." The paper was discussed by Drs Boas and Fishberg. Professor Franz Boas then presented "Notes on the Indian Tribes of Mexico."

Meeting of April 26, 1911

Dr Carl Lumholtz delivered a public lecture, illustrated by lantern slides, on his travels "In the Sonoran Desert," outlining the geographical, and to some extent the ethnographical, characteristics of the region recently traversed by him.

Meeting of October 30, 1911

A meeting of the Society was held jointly with the Section of Anthropology and Psychology of the New York Academy of Sciences. Professor Marshall H. Saville delivered a public lecture, illustrated by slides, on "Travels in the Lake Region of Northern Ecuador."

Meeting of November 29, 1911

A meeting of the Society was held at the American Museum of Natural History. Dr A. A. Goldenweiser briefly reported on the Portsmouth meeting of the British Association for the Advancement of Science, at which he had represented the Society and presented a paper on totemism. Dr Robert H. Lowie then spoke on "The Sun Dance of the Crow Indians." He called attention to the objective points of similarity with the Sun Dance of other tribes, while the subjective feeling or theoretical interpretation is quite different, the Crow pledging a performance exclusively in mourning the death of a relative in war and in order to compass the death of an enemy from the guilty tribe.

Meeting of January 29, 1912

At a joint meeting with the Section of Anthropology and Psychology of the New York Academy of Sciences, a business meeting was held and the officers were re-elected.

Dr Goddard then presented "Notes on the Jicarilla Apache." The Jicarilla Apache were from the point of view of material culture, a buffalo-hunting plains people dwelling in skin-covered tipis. Their social organization differs from that of the Navajo and neighboring Pueblo tribes in lacking exogamous clans, there being two geographical divisions with ceremonial and political, but not marriage-regulating, functions. Among the ceremonies the speaker mentioned an annual feast celebrated on the 15th of September and probably connected with the corresponding celebration at Taos, the conspicuous feature of both consisting in a relay race. A ceremony resembling the bear dance of the Southern Ute, is performed in cases of illness and is characterized among other things, by sleight-of-hand performances of masked dancers. The girls' puberty celebration is very prominent; a distinctive feature of the Jicarilla form of this ceremony seems to be the association of a young man with the adolescent girl. Among the myths of the Jicarilla that of the twin heroes stands out prominently.

In the course of the discussion Dr Goddard stated that he had been unable to discover myths definitely connecting the mythology of the Jicarilla with that of their linguistic congeners in California and the Far North. In reply to another query he expressed his belief that owing to the linguistic differentiation of the Apache, this tribe must have occupied its southwestern habitat a considerable period before the first historical notice of it.

Meeting of February 28, 1912

Dr Goldenweiser presented "Notes on the Iroquois" based on the results of his recent trip to the Grand River Reserve, Ontario. The unit of the Iroquois social system is the exogamous clan. Each clan has the exclusive right to use a set of individual names, which, however, bear no reference to the animal from which the clan derives *its* name. In several instances, two clans of one tribe derive their clan names from one and the same animal, *e. g.*, The Big Snipe and the Little Snipe clans of the Onondaga. The question arises, whether these "twin" clans arose from a bifurcation of one original clan or whether they have always been distinct. From the fact that in all such cases the two clans share the same set of individual names it is obvious that we are dealing with an actual subdivision of what were once single clans. Although most of the clans appear in all of the Five Tribes, and though Morgan is right in saying that there is a feeling of kinship between say a Wolf man of the Mohawk and a Wolf man of the Oneida tribe, the *tribal* clan must be considered the social unit. This is shown by the fact that the set of individual names is distinctive of the clan of one tribe and may not be appropriated by its namesake in other tribes. The clans of each tribe are grouped into two phratries which, among the Iroquois, seem never to have had any names. The clans of one phratry are "brothers" to each other, and "cousins" to the clans of the opposite phratry. The phratry no longer exercises marriage-regulating functions although the dual division always appears at ceremonies, feasts, games, burials, etc. On the other hand, the phratry seems to have had nothing to do with war and peace and other administrative business. In deliberations of such affairs there was rather a tripartite division, two of the divisions deliberating and the third casting the deciding vote. This system was also followed in councils of the League, the representatives of the Mohawk and Seneca forming one division, the Oneida and Cayuga the other, while the Onondaga, who were seated between these two groups and in front of the fire, cast the deciding vote.

Dr Goldenweiser also enumerated and briefly characterized the yearly harvesting feasts and the secret societies of the Iroquois.

In reply to a question by General Wilson as to the present numerical proportions of the Iroquois tribes, the lecturer explained that the Mohawk, while not so numerous at Grand River as the Onondaga and Cayuga, were the most influential, and that a large number of individuals in all tribes could speak the Mohawk language.

In answering a query by Dr Lowie, the speaker expressed his con-

viction that the phratries had formerly been exogamous, as represented by earlier writers.

Meeting of March 25, 1912

At a joint meeting of the Society and the Section of Anthropology and Psychology of the New York Academy of Sciences, Dr Robert H. Lowie presented a paper on "Dr. Radosavljevich's Critique of Professor Boas," the gist of which has since been published in *Science* (N. S. XXXV, 1912, p. 537 *et seq.*). In the course of the discussion, Dr Goldenweiser, who had taken part in the measurements made by Professor Boas, outlined the methods pursued.

Meeting of April 29, 1912

A meeting was held at the American Museum of Natural History. Dr A. A. Goldenweiser presented notes on "Barter in Aboriginal Australia."

Evidence from various districts of Australia discloses the existence of an extensive and at times highly regulated system of barter. In Central Australia, according to Spencer and Gillen, the natives of distinct localities have the reputation of high proficiency in the manufacture of this or that implement or weapon. This fact is not exclusively correlated with the presence in the particular district of the materials necessary for the production of a given object. Howitt records similar facts about Victoria and New South Wales, where the barter in objects thus localized in their productions usually takes place at tribal ceremonies and special "markets," at which natives from often very distant localities congregate. The Dieri send out two yearly expeditions, one to northern Queensland, for *pitcheri*, another, to the south, for ochre. The expeditions are undertaken by a detachment of able-bodied men who are forced to fight their way through tribal territories of hostile natives. On their way back, they exchange weapons for clothing and decorations supplied by the tribes with whom they came in contact. The *pitcheri* and ochre are obtained in enormous quantities and bartered over a vast stretch of country. W. E. Roth's data, referring to Queensland, are even more suggestive. He has succeeded in tracing a number of routes followed by bartering individuals and groups. He also speaks of smoke signals, messengers, and messenger sticks which lend to this system of intra- and inter-tribal barter definiteness and precision. Data with reference to messengers announcing the holding of "markets," are also not lacking from Central and Southeastern Australia.

Although most of the work in connection with a more thorough

knowledge of facts such as the above, remains to be done, enough is known to show the bearing of the data as to barter and specialization of production, on important phases of ethnological work in Australia. If an object found in one locality may be the product of a native living in a locality 100 to 200 miles distant, this fact must be taken into consideration, if one wants to understand the distribution of cultures in Australia. What is true of material objects, applies also to ceremonies, songs, myths, dances, names, which travel from district to district, and from tribe to tribe. Thus it becomes obvious that an intensive study of Australian cultural areas *per se* and their interrelations must precede any more ambitious attempts at cultural classification and stratification in the vast Oceanian area.

Meeting of October 7, 1912

At a meeting of the Executive Committee attended by Boas, Saville, Wissler, Hyde, Goddard, and Lowie it was decided to arrange an exhibit of archeological material collected in 1911–12 by the International School of American Archeology and Ethnology in Mexico City.

The exhibit, arranged under the joint auspices of the Society and the Department of Anthropology of Columbia University, was open to the public from November 4th till November 9th.

Meeting of October 28, 1912

After a business meeting, Professor Franz Boas delivered a lecture, illustrated by slides, entitled, "A Year in Mexico." Attendance, 110. Besides exhibiting pictures of interest, the speaker called attention to certain interesting features of Mexican folklore.

Meeting of November 27, 1912

At a meeting of the Society Mr Alanson Skinner summarized some of his recent field-work in a paper on "The Social Organization of the Menomini." (See "Social Life and Ceremonial Bundles of the Menomini Indians," Anthrop. Papers Amer. Mus. Nat. Hist., XIII, part 1.)

Meeting of January 27, 1913

With the consent of the Council of the New York Academy of Sciences, the American Ethnological Society invited Professors MacCurdy, Keller, Bishop, Huntington, and Bowman, all of Yale University, to attend a joint meeting of the Society and the Section of Anthropology and Psychology for the purpose of exchanging views on the problem of the

influence of geographical environment on human culture. Owing to the number of papers offered, an afternoon meeting was arranged for in addition to the customary evening session, General James Grant Wilson presiding at the former, and Professor Boas at the latter. Professor A. G. Keller read a paper on "The Natural Sciences as the Basis of the Social Sciences," which was followed by a lecture, illustrated with lantern slides, on "Pre-neolithic Environment in Europe" by Professor George Grant MacCurdy. After a recess for dinner the annual business session was held, resulting in the re-election of officers. Then the discussion was resumed by Professor Bishop, who read a paper on "Race Characteristics vs. Natural Environment in Commercial Success," while Professor Ellsworth Huntington presented his views on "Climatic Influences in Human Activity," and Professor Isaiah Bowman spoke on "The Physiographic Environment of the Machiganga Indians of Peru." Finally, Dr Clark Wissler, as representative of the American Ethnological Society, dealt with the subject of "Culture and Environment." Though the meeting was protracted beyond the customary hour, there remained unfortunately too little time for discussion, and in February the gentlemen from Yale invited several New York ethnologists to come to New Haven for a second meeting to be devoted to the same subject. Accordingly, Professor Franz Boas, Dr A. A. Goldenweiser, and Mr Carl W. Bishop of Columbia University, Drs Clark Wissler, H. J. Spinden, and Robert H. Lowie of the American Museum of Natural History, and Mr Stansbury Hagar went to New Haven on February 19th. After an informal dinner the discussion was taken up at the Anthropology Club, with Professor A. G. Keller in the chair. Dr A. A. Goldenweiser spoke on "Some Theoretical aspects of the Culture-Environment Problem," Dr Spinden read a paper on "Geographical Environment and the Southwestern Culture Area," Dr Lowie treated "Geographical Environment and the Plains Indians," and Professor Boas presented his views on "Arctic Environment and Arctic Culture." Professors Huntington and Bowman then expounded, with reference to the ethnological papers, the point of view assumed by modern geographers.

Meeting of February 25, 1913

At a meeting of the Society Dr A. A. Goldenweiser demonstrated "Some Uses of the Genealogical Method," illustrating mainly by examples culled from his field experience. He showed that the objective data presented by genealogical records in some instances form a valuable complement to the generalizing statements furnished by native informants.

Meeting of March 29, 1913

At a joint meeting of the Society, the Section of Anthropology and Psychology, and the American Folk-Lore Society (New York Branch), Dr Herbert J. Spinden read a paper on "Characteristics of Tewa Mythology." According to the speaker, the myths of the Tewa Indians of the Rio Grande region fall into these groups: first, cosmogonic and culture hero myths; secondly, animal tales, witch stories, etc., of lesser religious significance. The myths have a truly literary quality with many fine touches of human nature and a clear characterization of many individuals, such as certain of the Okhuwa or Cloud People. The myths are closely correlated with the highly specialized religion and are very valuable for the sidelights which they throw upon questions of ceremonial usage and ritual. Witch stories are highly developed. Practically no myths from this group of people have hitherto been published.

Dr Spinden's lecture was followed by Mr N. C. Nelson's paper on "The Galisteo Pueblos." Mr Nelson read a preliminary account of the past season's archeological work on behalf of the American Museum among the ruined pueblos of the Rio Grande, New Mexico. It was pointed out that the village Indians for centuries were confined to the upper portions of the drainage, owing possibly in part to the lack of water for irrigation in the lower reaches and in part also to the proximity of the marauding Apache. In addition, it was learned from extensive excavations, conducted mainly in the Galisteo basin country, south of Santa Fé, that a considerable change in the Indian mode of life was effected during the first century of Spanish occupation.

Finally, Mr Alanson Skinner presented "Notes on Menomini Folklore," discussing the cosmological concepts of that people with reference to their bearing on mythology, dwelling on the ritualistic myths of the Medicine Lodge, and the manner of their acquisition by candidates. Mr Skinner touched upon the main divisions of Menomini folklore, and recounted the taboos and other customs associated with story-telling.

Meeting of April 30, 1913

At a meeting of the Society, Dr Paul Radin lectured on "The Peyote Cult of the Winnebago Indians." Though this cult is of recent introduction among the Winnebago, it has risen to an important position within the tribe, rending it into two antagonistic factions. The phenomena connected with its appearance and spread thus shed light on the psychological processes of diffusion that form the center of so much ethnological discussion today.

Meeting of October 29, 1913

At a joint session of the Society and the Section of Anthropology and Psychology of the New York Academy of Sciences Dr Robert H. Lowie presented "Field Notes among the Hidatsa and Crow Indians." The speaker discussed principally the kinship systems of the Crow and Hidatsa, of which a valuable summary, though incorrect in certain points, was published by Lewis H. Morgan in his *Systems of Consanguinity and Affinity*, pp. 188 f. Morgan had noted as peculiarities of the Crow and Hidatsa systems that a mother's brother and an elder brother were addressed by the same term; and that a father's sister's son was addressed as "father," while a father's sister's daughter was addressed as "mother." Dr Lowie was able to state that the second peculiarity recorded by Morgan is carried out to an even greater extent,—father's sister, father's sister's daughter, father's sister's daughter's daughter, as well as all succeeding female descendants in the female line being included under a common kinship designation. The explanation of this disregard of generations in both of the cases that struck Morgan's attention seems to lie in the influence of the *clan* concept. As there is maternal descent among the Crow and Hidatsa, my mother's elder brother and my own elder brother are both my fellow-clansmen; and as fellow-clansmen are considered brothers, a single kinship term, regardless of age, becomes intelligible. Similarly, my father's sister and all her female descendants through females are members of the same clan as my father. But a father's clansfolk are considered fathers and mothers (or aunts when not directly addressed) regardless of age; hence it is natural that the term for "father's sister" should include all the female descendants through females of a father's sister. The correctness of this view is corroborated by a test case. As soon as the clan element is eliminated, a different kinship term must be used. While my father's sister's daughter's daughter is my mother (or aunt), my father's sister's *son's* daughter is not, for she can no longer belong to my father's clan in an exogamous clan system with matrilineal descent.

Meeting of November 26, 1913

At a meeting of the Society, Dr A. A. Goldenweiser delivered a lecture on "Individual Names among the Confederated Iroquois." Among the confederated Iroquois tribes every clan in each tribe is distinguished by its own set of individual names. Not only may a Wolf Seneca not bear a Bear Seneca name, but the name of the Wolf Seneca and the Wolf Onondaga are also distinct. These names are not analogous to our

personal names. In personal address, and to a large extent, also in indirect reference to individuals, relationship terms are used, not individual names, which may thus be regarded as ceremonial designations, used only on special occasions, and standing for clan solidarity. The content of the names does not refer to the clan animal or bird, but to features of nature, to occupations in war and peace, etc. Thus, a clan may not be recognized by the content of its individual names, unless one knows the specific names used by that clan. In other words, the sets of names are socialized, but not their content.

The individual names may be utilized in solving the problem of the origin of such clans as the Great Turtle and the Little Turtle, etc. We find that such clans always use the same set of names. Hence, they must have once constituted one clan.

Among the Mohawk the clan sets have broken down. Any Mohawk man or woman may use any of the Mohawk names. Now, whereas the existence of clan sets among the Cayuga, Onondaga, and Seneca, seems to have checked the tendency to invent new names, this tendency reappears among the Mohawk where the check does not exist. The Mohawk situation is thus psychologically similar to the ancient condition in these Iroquois tribes which must have preceded the formation of clan sets. The names now being invented among the Mohawk are also similar in content and structure to the ancient names from which, in fact, they cannot be distinguished. Hence, the processes by which names are created among the modern Mohawk must be like the processes utilized in ancient times. One such process is to bestow upon the child a name suggested by some circumstance attending its birth. Such names are given now, and many of the ancient names must have been so suggested.

Meeting of January 26, 1914

The annual meeting of the Society was preceded by a session of the Executive Committee, attended by Boas, Saville, Goddard, and Lowie. Sr Manuel Gamio, Mr A. V. Kidder, Dr E. A. Hooton were elected Anthropological Fellows; Professor Luise Haessler a Fellow; Rev. P. H. Ristan a Non-Resident Member; and Mrs Elsie Clews Parsons a Life Member. The Committee then nominated the following officers for the ensuing year, all of whom were subsequently elected by the Society: Honorary President, General James Grant Wilson; President, Franz Boas; First Vice-President, M. H. Saville; Second Vice-President, Clark Wissler; Recording Secretary, R. H. Lowie; Corresponding Secretary, Frederick S. Dellenbaugh; Treasurer, Stansbury Hagar; Librarian, R. W.

Tower. Executive Committee: In addition to the above, P. E. Goddard and A. A. Goldenweiser. Dr Boas proposed, and it was carried that, with the exception of the William Jones volumes for which the mover had assumed personal responsibility, the editing of future Publications should be entrusted to Dr P. E. Goddard.

After the election of officers Dr Fay Cooper Cole delivered a public lecture, illustrated with lantern slides, on "The Wild Tribes of Mindanao."

Dr Cole first described the Island of Mindanao and its history and then discussed in more detail the life of two of the pagan tribes,—the Bukidnon and the Bagobo.

The Bukidnon, who inhabit the north-central portion of the Island have for centuries been harassed by the wild Manabo warriors on the east, and by the slave-hunting Moro on the west. The many conflicts with these enemies caused them to develop a unique culture, one phase of which is shown in the tree-dwellings found in part of their territory. The presence of three well-marked physical types in the population is another point of interest brought out by this people. The native views concerning the spirit world and some of the ceremonies made to propitiate the superior beings were described and illustrated in the talk.

Going to the Bagobo, on Davao gulf, a glimpse was given into their traditions, laws, and customs, particularly those which led up to and explained the custom of human sacrifice, and the organization known as *Magani*—the members of which gain the right to the title and a distinctive type of dress, by slaying a certain number of enemies.

About seventy slides showing the country, the people and their homes, as well as several native crafts, were used.

Meeting of February 21, 1914

A meeting of the Executive Committee was held at the Faculty Club, Columbia University. Present: Boas, Saville, Goddard, Goldenweiser, Lowie. Messrs D. D. Streeter and Julius Sachs were elected Fellow and Member, respectively. On suggestion of the Chair it was proposed and carried to print 96 pp. of Swanton's *Haida Texts* during 1914 as a beginning of Vol. VIII, and to publish Jones's Kickapoo material as Volume IX. In response to a communication from Dr A. Hrdlička inviting the coöperation of the American Ethnological Society at the Americanist Congress and suggesting the appointment of two delegates, the President was empowered to appoint these delegates.

Meeting of February 25, 1914

At a regular meeting of the Society Dr A. A. Goldenweiser presented a paper on "Functions of Women in Iroquois Society." Dr Goldenweiser explained that in the house women did the cooking, sewing, and embroidering (ancient porcupine quill followed by modern beadwork). In the field, the functions of the sexes were divided. The men felled the trees (girdling, burning of dead trees); the women did the hoeing, sowing, planting, harvesting. The work was communal on the common lots as well as on the individual fields, which, while not the property, were, together with the house, in control of the women. One woman—usually the most prominent woman of the leading clan in a locality—was in charge of the field work and with the help of two female assistants superintended the labors of the "bee." From the owners of the individual fields, each woman of the "bee" received a new dress; a meal was also provided for the workers. There was considerable jollification on these occasions; the old men would tell stories; also women would often gather information from the leaders of the "bee" as to the working capacities of girls whom they wanted as wives for their sons.

In ceremonial matters woman was the equal of man. Three males and three female officials were elected from each clan (these officers were hereditary in *maternal families*) who, at preliminary meetings, arranged the details of ceremonies, superintended the preparation of food, fixed the date, and officiated at the ceremonies themselves.

Perhaps the most important functions of women were in connection with the political system, namely with the election and deposition of federal chiefs, of whom there were fifty in the League. These chiefs were hereditary and elective in *maternal families*, the office passing most commonly from uncle to nephew and from brother to brother.

Upon the death of a chief, a successor was nominated by the head woman of his maternal family. This nomination was discussed by women of the family at an informal council, to which the other women and men of the clan were also admitted. At these councils the candidate selected by the head woman was almost invariably accepted. The nomination was then ratified (or, in very rare cases, rejected) by the chiefs of the phratry, to which the clan of the deceased belonged, then by the chiefs of the opposite phratry, then by the confederate council. On that occasion a date was set for the ceremonial "raising" of the new chief. The head woman of his family kept close watch over the activities of the new chief. If he did not live up to the required standard, she called on him and admonished him to desist. This visit was repeated, if

necessary. If he still persisted in his evil ways, the head woman accompanied by the chief warrior of the clan, again called on the chiefs, and formally deposed him, subsequently notifying the confederate council of her act.

While women could not be chiefs and had no vote in tribal or federal councils, their functions in connection with the election and deposition of chiefs constituted them a most important factor in Iroquois society. Moreover, prominent women often addressed councils, some were noted for their eloquence, and, in all cases, the opinion of women was asked and heeded.

Contrary to the prevailing opinion, supported by such instances as the Iroquois, there is no necessary connection between maternal descent and matriarchate. While conditions among the Zuñi, for instance, are not unlike those among the Iroquois, the position of women among the highly advanced tribes of the Northwest Coast, the Tsimshian, the Haida, the Tlingit, is by no means as high, notwithstanding the tracing of descent through the mother. Economic factors are of importance here. Wherever woman is an essential factor in tribal economy, as among the agricultural Iroquois and Zuñi, where woman is the agriculturist, her status tends to be high. Another circumstance operating in the same direction is the husband's residence with the wife's family, a common but not invariable concomitant of maternal descent. It must also be noted that in the most primitive stages of culture, woman's status is never as low as at some much higher stages with polygamy, patriarchal family, etc. A systematic subjection of one important element in society by another cannot be successfully achieved in the absence of the fixity of social forms and the unwieldiness of the social fabric which are characteristic of relatively high stages of culture (a comparison of slavery among primitive and civilized peoples would corroborate this principle.)

Meeting of March 23, 1914

A meeting of the Society was held in conjunction with the Section of Anthropology and Psychology of the New York Academy of Sciences. This being a General Meeting of the Academy, in charge of the Section, Dr George F. Kunz, President of the Academy, introduced as the representative of the Section Dr R. H. Lowie, who took the chair, introducing the lecturer of the evening, Professor Hiram Bingham of Yale University. Professor Bingham's address, which was illustrated with slides, dealt with "Recent Exploration in the Land of the Incas." He outlined the results of the expedition of 1912 under the joint auspices

of Yale University and the National Geographic Society, which had for one of its chief objects the clearing and exploration of Machu Picchu in southern Peru, a city so ancient that there is no reference to it in the Spanish chronicles, and its old name is not known. The ruins were discovered by the Yale Expedition of 1911. This ancient city, which seems to have been built by the Incas or their immediate predecessors, between one and two thousand years ago, is situated on a narrow, precipitous ridge 2,000 feet above the Urubamba river. It is 9,000 feet above the sea, and is located in one of the most inaccessible parts of the Andes, about sixty miles north of Cuzco. It contains about 200 edifices, including palaces, stairways, temples, fortifications, and shrines, all built out of white granite. It is admirably situated for defense, and is protected by two walls and a dry moat. In culture it is probably purely Incaic. Owing to the extraordinary number of windows, the presence of three large windows in the principal temple and the evidence of the city being finely situated for a place of refuge, it is thought that possibly we may have here the ancient "Tamp Tocco," which is ordinarily supposed to have been south of Cuzco, near the village of Peccaritampu.

Meeting of April 30, 1914

A regular meeting was held, at which Mr Leslie Spier was elected a Fellow and Mr W. L. Smith a Non-Resident Member. Among those present was Dr Edward Sapir of the Geological Survey of Canada. Professor Franz Boas spoke on "Indian Mythologies of Alaska and Northern British Columbia." He explained the sharp distinction drawn between "myth" and "tale" in this area, there being throughout distinct terms for these concepts. By the example of the Bungling Host story he showed that there is not merely diffusion, but also a new development of basic themes. He then pointed out how differently the several tribes of the area deal with their traditional lore. In the north interest centers in the Raven cycle; in the central region interest is divided between the Transformers and Mink; while in the south the tendency toward definite cycles is much less strongly developed. Comparing the Raven cycles of the Tlingit, Haida, and Tsimshian, the complexity and incoherence of the Haida myth are noteworthy. A very suggestive feature is the paucity of elements accounting for the origin of cultural possessions in the Raven cycle,—this in spite of the fact that the Raven appears as the culture hero. The Northwest Coast material seems to support the view that explanatory elements are secondary additions to tales.

The paper was discussed by Doctors Goddard, Goldenweiser, Sapir, and Lowie.

Meeting of October 26, 1914

At a joint meeting of the Society and the Section of Anthropology and Psychology of the New York Academy of Sciences, several papers were presented.

In his paper on the "Origin of Clans among the Iroquois" Dr A. A. Goldenweiser developed the following lines of thought. The problem of clan origins has for years attracted the attention of ethnologists. The common assumption made about the origin of clans is that they have sprung from an original social group through subdivision, the primal group often developing into a phratry.

Researches among the Iroquois of Western New York and Eastern Canada revealed three types of clan origins.

Type I. Origin by subdivision. This is seen in the common phenomenon of two clans bearing the name of the same animal but distinguished by an adjective. Here it was possible to prove that such clans originally constituted one clan, for they still preserve the same set of individual names.

Type II. Origin by fusion. A number of instances have come to light in which a Delaware and a Tuscarora clan of the same name, or an Oneida and a Tuscarora clan of the same name, have fused into one clan.

Type III. Origin from a maternal family. In one instance, at least, it can be shown that a maternal family consisting of individuals of one direct line of maternal descent, has developed into a clan distinguished as White Bear, whereas the other individuals of what was originally the same clan, are known as Black Bears or Bears.

It will be noted that in origins of types I and II conditions of locality and population must have been determining factors. There are reasons to believe, however, that not one of the above three types of origins represents the origin of clans which was most common in the history of society. I refer to the origin of clans from local groups which develop social solidarity through the exercise of common functions and intermarry, producing the local distribution of individual clans so characteristic of communities having clan or gentile systems. We may designate this type of origin, which has not so far been sufficiently demonstrated by concrete data, as type IV. Conditions on the Northwest Coast make it all but certain that such was the predominant origin of clans in that area.

However that may be, the above instances, excepting type III, make

it clear that the growth and depletion of a population on the one hand, and occupation of the same locality on the other, must have been all important factors in the history of clan-origins.

Mr Alanson Skinner next spoke on "The Social and Ceremonial Organization and Societies of the Iowa Indians." The Iowa are divided into seven exogamic gentes each of which is made up of four subgentes. Chieftainship is hereditary in the royal family of each subgens. The tribal chief is the chief of the Buffalo gens during spring and summer, and of the Bear gens during winter. On the march or hunt a chief is elected each night, his office expiring the following evening. In addition to the gentile system the tribe has three classes or castes, royalty, nobility, and commoners, which tend to be endogamous.

The societies and dances of the Iowa are of four types. Military, social, ancient and modern mystery dances. Many of these are typical Plains military societies, with the no-flight rite and crooked-spear regalia, etc. The Helucka dance is important. Of mystery and animal dances the Buffalo dance and Medicine dance take first rank. The latter is a form of the Algonkin Midéwin. Of modern societies and cults the Ghost, Religion, and Peyote are foremost. The Peyote cult is rapidly doing away with all ancient customs.

Finally, Dr R. H. Lowie presented some remarks on "The Cultural Relations of the Northern Paiute." He explained that the Northern Paiute (Paviotso) who claim linguistic relation with the Bannock, had been in recent contact with the Shoshone on the east, and the Washo and Pitt River Indians on the west, the latter figuring in tradition as their foremost enemies. Culturally the Northern Paiute display interesting relations with both the Californian Indians and the Lemhi Shoshone. Some of their tales are especially suggestive of important Lemhi myths. On the other hand, the economic life, with its very extensive dependence on seeds, the high development of basketry, the use of the balsa, and other traits indicate a cultural connection with California.

Meeting of December 17, 1914

Before an audience of about 40, including among the guests Professor Arnaldo Faustini of the University of Rome, Professor Felix von Luschan (Berlin) gave an address on "Culture and Degeneration." After enlarging on the achievements of modern civilization and the very real progress made in many directions, the speaker turned to *le revers de la médaille*. He enumerated four causes of degeneration: the increase of insanity, the increase of criminality, the dying out of urban families owing to the

influence of alcoholism and venereal diseases, and the prudential restriction of the birth-rate. The increase of insanity he regarded as apparent, there being really merely an increase of those confined in asylums; and criminality, so far as it is a biological trait, he felt confident could be reduced very largely by a policy of isolation. On the other hand, the ravages of drink and venereal infection, coupled with neo-Malthusian practices, must inevitably lead to racial decadence.

The lecture, which was illustrated with lantern slides, was discussed by Dr Fishberg, Dr Lowie, and Professor Boas. Dr Fishberg emphasized the importance of the decreased infant mortality as balancing the effect of the decreased birth rate. He also cited Pearson's data as to the non-injurious effect of parental alcoholism on the children. Dr Lowie inquired what was the proportion of biological criminality, the result of inheritance, to the other type of purely juridical criminality. Professor Boas raised the question, to what extent Mendelian inheritance was proved for the human species, and also cited the decreased infant mortality as a counterbalance to the reduced birth rate. One of the guests asked to what extent economic factors produced neo-Malthusian practices.

In reply Professor von Luschan emphasized the necessity of both quantity and quality of offspring. The economic factor does not enter, he contended, because prudential motives do not influence the poorer but only the well-to-do classes. By criminality, he repeated, he meant only biological criminality that is unaffected by the environment. He was obliged to reject Karl Pearson's statistical investigations on alcoholism.

Meeting of January 22, 1915

Meeting of the Executive Committee, 4.30 p.m., in Dr Goddard's office. Present: Boas, Goddard, Hagar, Lowie. It was moved and passed that the Chair appoint a committee to present the draft of a revised Constitution to the Executive Committee. On motion of the Secretary it was passed that the Society be incorporated and that Mr Hagar be instructed to take the necessary steps. The Treasurer presented his report. The Secretary was instructed to send a list of members, after revision by the Treasurer, to Brill. It was decided to drop from the membership list A. R. Goldstein, Elias Brown, and H. B. Vannote, and to communicate with other delinquent members. The Secretary was instructed to write up the proceedings of the Society to include the meeting of January 25, and to publish in the *Anthropologist* with an account of expenditures. It was decided to prepare a resolution to be submitted to the Society expressing the opinion of the Executive

Committee that in the interests of the organization the practice of the continuous re-election of officers should be abandoned. The following officers were then recommended for nomination before the Society: President, Franz Boas; First Vice-President, George Bird Grinnell; Second Vice-President, A. A. Goldenweiser; Recording Secretary, Corresponding Secretary, and Librarian, R. H. Lowie; Treasurer, Stansbury Hagar; Executive Committee (in addition to the above), M. H. Saville, Else Clews Parsons, H. J. Spinden; Editor, P. E. Goddard. President Boas presented the draft of a reply to a letter received from the French Universities as a protest against the declaration of the German Universities. After some slight verbal changes, Professor Boas was directed to give proper publication to the letter in the United States.[1]

Meeting of January 25, 1915

At the annual meeting of the Society, coinciding with the monthly Sectional meeting of the Academy, the officers nominated by the Executive Committee were unanimously elected. Dr Lowie then presented the following:

Secretary's Report

The present membership of the American Ethnological Society, divided into the classes established by the Constitution and usage, is as follows: Life Members, 13; Fellows, 52; Anthropological Fellows, 23; Members, 13; Non-Resident Members, 3; Subscribers, 12; total, 116. Early in the year we sustained the loss of our Honorary President, Gen. James Grant Wilson, for many years President of the Society. The Society held the usual number of meetings, three of them in conjunction with the Section of Anthropology and Psychology of the New York Academy of Sciences. At these meetings the following eight papers were read: Fay Cooper Cole, The Wild Tribes of Mindanao; A. A. Goldenweiser, Functions of Women in Iroquois Society; Hiram Bingham, Recent Exploration in the Land of the Incas; Franz Boas, Indian Mythologies of Alaska and Northern British Columbia; A. A. Goldenweiser, Origin of Clans among the Iroquois; Alanson Skinner, The Social and Ceremonial Organization of the Iowa; R. H. Lowie, The Cultural Relations of the Northern Paiute; Prof. Felix von Luschan, Culture and Degeneration.

The work of publication of native linguistic material has been actively promoted and a specific report will be presented by the Editors.

In the absence of Mr Hagar the Secretary presented the following Treasurer's Report, which was accepted for auditing.

[1] See p. 416 below.

Permanent Fund, Jan. 22, 1915		$2414.60
(Increase for 1914, $100.00)		
Drawing Account, Jan. 19, 1915		547.03
Income		
Dues		352.10
Interest, permanent fund		163.35
		$515.45
Expenditures		
Stationery, printing, mailing	$ 28.45	
Lantern operator	1.50	
Engrossing Wilson resolutions	25.00	
Editorial and secretarial expenses	6.75	
1913, Vol., No. 3, Anthropologist	54.00	
	$115.70	115.70
Balance of income over expenditures		$ 399.75

Approved by auditing committee, Feb. 23.

CLARK WISSLER,
H. J. SPINDEN

Rev. John W. Chapman then presented a paper on "The Medicine-Men of Anvik, Alaska, and the Vicinity." After sketching his personal observations of shamanistic practices, the lecturer described some of the fundamental native theories underlying them. One method of foretelling the future is to go to the moon where the shaman meets his informants; another was to look into the bottom of wooden bowls and there see, as in a vision, what was to come to pass. The shamans enjoy a privileged position in native society. They pretend to ward off danger from individuals and exact high fees in return. The office is not hereditary, but seems based on the conviction becoming established that a certain man possesses extraordinary powers. The intellectual atmosphere in which such a belief may thrive is characterized by certain striking features. Honors and mortuary gifts are regularly paid to the deceased. It was formerly the custom to remove a corpse from the house through the smoke-hole rather than the usual exit. There were a number of feasts, some of a purely social potlatch type, others of a ceremonial character. One of these is noted for its pantomimic exhibitions. There is a belief in the survival of the soul after death, special conditions being assigned to suicides and those who die by violence.

The lecture gave rise to many questions and comments by Drs Boas, Goddard, Lowie, and Hatt. Dr Hatt called attention to certain interesting similarities between Anvik and Lapp beliefs and customs.

ROBERT H. LOWIE,
Recording Secretary

SUMMARY OF THE WORK OF THE INTERNATIONAL SCHOOL OF AMERICAN ARCHEOLOGY AND ETHNOLOGY IN MEXICO

1910–1914

1. Policy

In founding the School, the Patrons and Protectors determined that it should be the object of the establishment to promote in every possible way scientific research relating to the archeology and ethnology of Mexico and the adjoining countries. In determining on this policy, the Patrons and Protectors decided that the School should not devote itself to popularization of these subjects, but to the training of productive investigators and to the advancement of our knowledge. Accordingly, it was decided that Fellows of the School should be men who had completed their preliminary studies and who were able to devote themselves to field researches. Accordingly, the duties of the Director in his relations to the Fellows were primarily the selection of problems for their field-work, and the direction of their work in such a way as to develop their power for independent investigation.

By following this policy, the Patrons and Protectors hope also to develop gradually a body of investigators who, on account of a friendship developing through personal coöperation, would help to advance the interests of our branch of science in all the countries from which they came.

2. Method of Research

Since the organization of the School provides for a regular change of Directors, it seemed necessary to take steps to avoid a dissipation of energy and to develop a continuous policy in the research work of the School. The Secretary of the Junta Directiva was charged with correspondence between the Directors, and has taken particular pains to connect the work of each Director with that of the preceding Director. This has been done by means of extended correspondence and personal conferences. The problems which have been the subject of the researches of the School were evolved principally during the first two years. To these were added incidentally investigations that developed from the larger plans.

During the first year of the School, 1910–11, while Professor Seler of Berlin was in charge of the work, considerable time was consumed in the preliminary organization. During this time, Professor Seler was able to make certain studies in Yucatan and in Palenque. On these journeys he was accompanied by the Fellows of the School. During the same year Professor Boas, who was at that time associated with the University of Mexico and with the International School, commenced the organization of work on the native languages of Mexico. Professor Seler's attention was also devoted to some of the important problems of the archeological history of the Valley of Mexico.

From this work of the first year was developed a more systematic plan for researches, and since that time the School has devoted its attention primarily to the following problems:

1. The geological sequence of civilizations in the Valley of Mexico and their relations to other parts of the country. Professor Seler had called particular attention to the diversity of types occurring in the Valley of Mexico,—a fact that had become apparent to other investigators as well. The question arose, how to determine the chronological sequence of these remains. A survey of the wells and brick-yards in the environment of the City of Mexico showed that this question could be studied by observations on geological sequence of strata. In the year 1911–12 a careful investigation was conducted in one single excavation in a brick-yard at San Miguel Amantla near Atzcapotzalco, which was carried out under the supervision of the Director by Mr Manuel Gamio. The result of this excavation was the definite proof that three distinct civilizations were found in the Valley of Mexico,—a primitive one, which is found in the bottom layers; a second one, identical with that of San Juan Teotihuacán; and a third one, the Aztec. Of these, the second period seemed to be the longest.

It was necessary to extend the results of this single investigation and to make other parallel investigations in numerous parts of the valley. Furthermore, it seemed necessary to determine the chronology of these periods by exact levels carried over the valley and intended to determine the depths at which these deposits were found in relation to the level of the lake.

After it had been determined that these three types occurred in succession in the valley, the question arose of ascertaining their distribution, and a careful search of archeological sites was made in the neighborhood of the city, which led to the discovery that the archaic type was found in a number of definite sites on the lower slopes of the hills,—north

of Guadalupe, on the Peñon de los Baños, on the Cerro de la Estrella, Contreras, Texcoco, San Angel, Coyoacán, and at other places. At the same time a few sites of the period of Teotihuacán were discovered.

The most ancient type appeared clearly related to the finds from the Tarascan and Otomí areas. Mr Hay, one of the Fellows of the School, working under the direction of Professor Tozzer, discovered similar types in the State of Vera Cruz, and found that the form extends southward into Guatemala and Salvador. The wide distribution of this type makes the investigation one of great importance. The archeological investigations during the past years were all devoted to clearing up this important problem.

Incidentally it seemed necessary to obtain greater clearness in regard to the relationships of the archaic type, and for this purpose Professor Engerrand undertook an investigation in Colima. Professor Tozzer was led, in connection with this investigation, to the study of a small cerro near Santiago Ahuitzotla, which yielded important results.

No extended publication on this subject has been made up to the present time, because the problem still requires further investigation. The School has obtained sufficient data, however, for a characterization of the type of the archaic civilization. Material bearing upon the succession of these three types has been illustrated in the Album mentioned as No. 19 of the list of publications.

Another problem arose in connection with the detailed studies on the distribution of types in the Valley of Mexico. Since we had to determine the chronology of successive civilizations, we had to know whether there was a probability of the development of local types during the same period. Striking evidence of the occurrence of such local types was found in Culhuacán and in Texcoco, and for this reason special attention was paid to the accurate determination of the local type of pottery of Culhuacán. This work has been largely in the hands of Miss Isabel Ramírez Castañeda. During the second year indications were found that in Culhuacán the same succession of civilizations occurred; but, owing to the character of the soil, the evidence was not conclusive, and the investigation was carried on during the following year. Fairly convincing evidence was also found during the second year of the School, showing that the two Aztec types found in this district were not synchronous.

Thus the problem before the School may be summarized as centering around the accurate investigation of the succession of civilizations in the Valley of Mexico and the effort to establish an exact chronology.

2. The ethnological investigation had for its primary object the inquiry into the structure and distribution of languages of the country. For this purpose an accurate phonetic examination of the Mexican was undertaken, which entailed the study of some of the strongly divergent dialects. An inquiry into the valuable material collected by Dr Peñafiel in connection with the census of Mexico indicated that some of these aberrant types of Mexican were on the verge of extinction, and for this reason these were taken up first. The dialects of Pochutla and of Tuxtepec were studied. Mr Mechling determined the occurrence of three distinct dialects in the region between Tuxtepec and Vera Cruz. It was planned to extend this investigation over other dialects of the Mexican language.

At the same time the more detailed study of certain languages was taken up. The School was guided in this largely by the urgency of the case; and one of the Fellows, Dr J. Alden Mason, spent two seasons among the Tepecanos of Jalisco, whose language is confined at the present time to a few individuals of one single village; while Dr Paul Radin studied the Huave near Salina Cruz, which is also bound to disappear within a short time. In connection with his studies in Tuxtepec, Mr W. H. Mechling made collections of the Mazatec and Chinantec. During the third year Dr Radin was also instructed to make a preliminary phonetic survey of the Zapotecan dialects with a view to laying out a plan for a future more thorough investigation of this difficult field.

The linguistic material brought together in this way, which consists to a very great extent of texts, brought up a question of great importance. It appeared that among the Tepecano a certain amount of ancient Mexican material still persisted, but that everywhere else the traditions of the people gave clear evidence of a far-reaching influence of Spanish oral tradition. It appeared that for the purpose of interpreting the ethnology of the Mexican Indians it was indispensable to understand better the influence of Spanish civilization upon them. From this point of view two problems were attacked. Collections were made of the folklore of the Indians, and these were compared with Spanish sources, and an investigation was made of the phonetics of the Spanish as spoken in various parts of the country, in order to determine the mutual influences of Spanish provincial dialects and the languages spoken by the Indians who later on had acquired Spanish speech. The folkloristic side of this work was carried on by all the Fellows, whose work was chiefly devoted to linguistic and ethnological researches and also by Miss Ramírez Castañeda. The strictly philological inquiry was carried on by Dr Leopold Wagner.

In the judgment of the past Directors and of the Secretary of the Junta Directiva, it should be the policy of the School to continue inquiries in regard to these three problems: namely, a chronology of archeology in the Valley of Mexico; the analysis of the grammar of Mexican languages; and the folklore and phonetics of Mexican in relation to their Spanish and Indian sources.

3. Collections and Publications of the School

It has been the opinion of the Patrons and Protectors of the School that the essential scientific results of the work of the School should be placed in the Mexican Republic. For this reason it is deemed essential by all the participants that not only the most important parts of the collections, as illustrating the scientific points gained, should be deposited in the National Museum of Mexico, as is required by law, but that also the important publications of the School should be made in Mexico, so far as this may be feasible. In accordance with this plan, the Secretary of the Junta Directiva has attempted to induce in every case the investigators connected with the School to give the opportunity to the Mexican Government to publish their work, if the Government should be so inclined. The Secretary of the Junta Directiva also believes that the important specimens of the School should be published, and should in this way be made accessible to scientists who are devoting themselves to the investigation of Mexican antiquities and of Mexican ethnology. In accordance with this plan, a selection of specimens was made during the second year, in which all the essential scientific points brought out by the School inquiry were represented, and the specimens thus selected were illustrated in an Album that has been printed in Mexico City. It is the opinion of the Secretary of the Junta Directiva that the School should continue to publish illustrations in this manner.

It may not be amiss to call attention here to the fact that the problems to which the School devotes itself make it necessary that particular attention should be paid to all fragments, however unsightly, that may reveal important data in regard to our studies. This is the reason why the School collections contain so many fragments of pottery (*tepalcates*). If the Secretary of the Junta Directiva is allowed to express an opinion, he would like to say that one of the greatest needs for the advancement of scientific archeology is the establishment of a building or at least of rooms, which would enable the Museum to deposit in trays accessible to the student, although not necessarily accessible to the public, a large collection of broken material that is indispensable for an accurate study

of our problems. As long as this is not available, the handling of material of this type will always be difficult. It is not by any means necessary to preserve in Mexico everything of this type that is found, but a selection like the one illustrated in the Album should be available to students.

FRANZ BOAS

LIST OF PUBLICATIONS AND MANUSCRIPTS[1]

1. Eduard Seler, Archaeologische Reisen in Süd- und Mittel-Amerika (Zeitschrift für Ethnologie, Berlin, vol. xliv, 1912, pp. 201–242).
2. Eduard Seler, Die Stuckfassade von Acancah in Yucatan (Sitzungsberichte der K. preussischen Akademie der Wissenschaften, vol. xlvii, 1911, pp. 1011–1025, 10 pl.).
3. J. Alden Mason, Four Mexican-Spanish Fairy-Tales (Journal of American Folk-Lore, vol. xxv, 1912, pp. 191–198).
4. W. H. Mechling, Stories from Tuxtepec, Oaxaca (Ibid., vol. xxv, pp. 199–203).
5. Franz Boas, Notes on Mexican Folk-Lore (Ibid., vol. xxv, pp. 204–260).
6. Franz Boas, Notes on the Chatino (American Anthropologist, N.S., vol. xv, 1913, pp. 78–86).
7. Franz Boas, Archaeological Investigations in the Valley of Mexico by the International School, 1911–12 (Proceedings of the 18th International Congress of Americanists, London, pp. 176–179).
8. Franz Boas, Phonetics of the Mexican Language (abstract) (Ibid., pp. 107–108).
9. Manuel Gamio, Arqueología de Atzcapotzalco, D. F., México (Ibid., pp. 180–187).
10. Isabel Ramírez Castañeda, El folk-lore de Milpa Alta, D. F., México (Ibid., pp. 352–361).
11. J. Alden Mason, The Tepehuán Indians of Azqueltán (Ibid., pp. 344–351).
12. J. Alden Mason, Folk-Tales of the Tepecanos (Journal of American Folk-Lore, vol. xxvii, 1914, pp. 148–210 [véase: Aurelio M. Espinosa, Comparative Notes on New-Mexican and Mexican Spanish Folk-Tales, Ibid., pp. 211–231]).
13. Escuela Internacional de Arqueología y Etnología Americanas, Año Escolar de 1910 a 1911. Informe del Presidente de la Junta Directiva. México 1912. pp. 1–32.

[1] Those marked (*) are partially printed; (†) manuscripts completed and in the hands of the Secretary of the Junta Directiva; (‡) manuscripts in preparation.

14. —— Año Escolar de 1911 a 1912. Informe del Presidente de la Junta Directiva. México 1913. pp. 1–14.
15. —— Anexo al Informe del Presidente de la Junta Directiva, Año 1911 a 1912; Exposición de Trabajos en la Sala de Conferencias del Museo Nacional de Arqueología, Historia y Etnología. pp. 1–20.
16. Jorge Engerrand, Discurso Inaugural y Reseña de la Exposición anual de la Escuela Internacional de Arqueología y Etnología Americanas (Boletin del Museo Nacional de Arqueología, Historia y Etnología, vol. ii, México, 1913, pp. 263–269).
17. W. H. Mechling, Languages of Oaxaca (American Anthropologist, N.S., vol. xiv, pp. 643–682).
18.* Franz Boas, El Dialecto Mexicano de Pochutla, Oacaxa (Museo Nacional de Arqueología, Historia y Etnología).
19.* Álbum de arqueología mexicana hecho con 69 láminas (plates finished, texts by Sr. Manuel Gamio).
20.* Isabel Ramírez y Casteñeda, Apuntes acerca de los Monumentos de la Parroquia de Tlalnepantla (in Anales del Museo Nacional, vol. iv, 1913).
21.† Franz Boas, Pottery Designs from Culhuacán, D. F. (to be published by the Museum of the University of Pennsylvania, Philadelphia, Pa.).
22.† Paul Radin, El folk-lore de Oaxaca (to be published by co-operation of the Hispanic Society of America with the International School).
23.† Paul Radin, Phonetics of Zapotecan Dialects.
24.† Paul Radin, The Huave, Grammar, Dictionary, and Texts.
25.† W. H. Mechling, Notes on the Mexican Dialect of Tuxtepec, Oaxaca.
26.† J. Alden Mason, Grammar and Texts of the Tepecanos (to be published by the New York Academy of Sciences).
27.† [Alfred M. Tozzer] Año Escolar de 1913–1914. Informe del Presidente de la Junta Directiva.
28.‡ J. Alden Mason, Religion of the Tepecanos.
29.‡ Franz Boas, Archaeological Observations between Teul and Mesquital del Oro, Zacatecas.
30.‡ Franz Boas, Folk-Tales in Modern Mexican.
31.‡ Jorge Engerrand, A report on archaeological investigations in Colima.
32.‡ [Jorge Engerrand] Año Escolar de 1912–1913. Informe del Presidente de la Junta Directiva.

33.‡ Clarence L. Hay, The "tipo arcaico" and its place in the cultures of the Valley of Mexico.

34.‡ Alfred M. Tozzer, The excavation of a pre-Aztec site in the Valley of Mexico.

35.‡ Max Leopold Wagner, The Spanish Language as spoken in Mexico.

36.‡ Folk-Tales, Romances, Riddles, and Songs from the Federal District and from the State of Vera Cruz.

37.‡ Infancia de N^ro^ Sr. Jesu-Cristo.—MS. del siglo XVI de Tlacotálpam, Vera Cruz.

Report of the Director for 1913–1914

Señor Professor Doctor D. Ezequiel A. Chávez,
President of the International School of American
Archeology and Ethnology, Mexico.

Sir,—

As Director of the School for 1913–1914, I have the honor to submit to you a report of the activities of the School for the year.

Managing Committee of the School

President, Professor D. Ezequiel A. Chávez, Delegate of the Government of Mexico.

Secretary, Professor Franz Boas, Delegate of Columbia University.

Secretary in Mexico, Doctor Alfonso Pruneda.

Professor Eduard Seler, Delegate of the Government of Prussia.

Professor Roland B. Dixon, Delegate of Harvard University.

Professor George B. Gordon, Delegate of the University of Pennsylvania.

Archer M. Huntington, Esqr., President of the Hispanic Society of America.

Directors and Fellows

Director: Professor Alfred M. Tozzer, nominated by Harvard University.

Fellows: Señor Rodrigo Gamio, nominated by the Government of Mexico.

Señorita Isabel Ramírez y Castañeda, nominated by the Government of Mexico.

Doctor Max Leopold Wagner, nominated by the Government of Prussia and the Hispanic Society of America.

William H. Mechling, A.M., nominated by the University of Pennsylvania.

Clarence L. Hay, A.M., nominated by Harvard University.

The work of the School for the year was in the following fields of research: the Spanish language in Mexico, the diffusion of Spanish narrative literature in Mexico, Spanish folklore, Mexican linguistics, Mexican folklore, and archeology.

Dr Max Wagner, the Prussian and Hispanic Society Fellow, worked in Mexico, Cordoba, Alvarado, Tlacotalpam, Cosamaloapam, and part of Tehuantepec. An endeavor was made to ascertain the present status of the Spanish language, literature, and folklore in Mexico. Dr Wagner gathered ample linguistic material to enable him to publish a general work on the Spanish language as spoken in Mexico. He also collected a large number of words of the jargon of the Mexicans together with some poems in a secret jargon and some popular texts. These have never been fully investigated and they offer much philological and sociological interest.

In Dr Wagner's study of the vitality of Spanish tradition he found that the Spanish tales, riddles, and songs were much better preserved among the Indians than among those who speak only Spanish. The words and music of many songs were transcribed, including those of children, lullabies, quintas, sextas, decimas and romances or corridos. Dr Wagner had the good fortune to find in Tlacotalpam in the state of Vera Cruz a book of great linguistic and literary importance, dating probably from the sixteenth century. The book was printed in Spain, and serves as a text for the sacred performances still given each year at Christmas. The book is unknown to the literary world. It deserves great attention, because the unknown author shows himself a clever dramatist. The book contains many pastoral scenes written in the old dialect of Andalusia. It is also important for the history of the sacred performances in Mexico.

William H. Mechling, the University of Pennsylvania Fellow, continued his studies, begun under Dr Boas in 1911–1912, upon the Nahuatl dialect spoken in Tuxtepec, Vera Cruz. He verified his former texts, collected several new ones, and amplified his grammatical material on this dialect now on the verge of extinction. He also studied the dialects spoken in Santiago Aculo and San Andres Aculo in the canton of Cosomalahuapan, in Vera Cruz, Jaltipan on the Isthmus of Tehuantepec, and San Andres and Santiago Tuxtla. The dialects of this part of the state of Vera Cruz seem to fall into four groups: (1) Those northwest of the Papalohuapan River; (2) Those of Santiago and Acula; (3) Those of Tuxtepec and the Isthmus of Tehuantepec; (4) Those of the Tuxtlas.

The limits of the Chinantec language were determined. It was found

to extend into the northern parts of the districts of Ixtlan, Villa Alta, and Choapan, Oaxaca. The Chinantec area is divided into two districts, —one the *tierra caliente*, and the other the high arid plateau. This division seems to be physical, linguistic, and ethnic. The work on the Chinantec seems to show that it has little relation with the surrounding languages. It is difficult to record phonetically, as it has not only pitch accent, but long and short vowels with a very definite quality, together with glottal stops. Some material was also collected on the Mazatec language.

Mr Mechling was able to make an archeological reconnaissance of the territory covered by his linguistic studies.

Miss Castañeda, one of the Mexican Fellows, spent the greater part of the year writing her report on the interesting and important collection she excavated at Culhuacán during the previous year. This collection adds much to our knowledge of the southern inhabitants of the Valley of Mexico. Miss Castañeda aided to some extent Dr Wagner in his researches, in addition to collecting many new tales and songs from the native population of the Valley.

Mr Clarence L. Hay, the Harvard Fellow, continued the stratigraphical work near Mexico City, which has been the most important archeological problem of the School. The most extensive work was carried on in San Miguel Amantla. Here the "tipo arcaico," also called the "tipo de cerro" and the "tipo montaña," was found *in situ* from 3 to 3.5 meters below the surface. A few pieces of this type were encountered as high as 2 meters from the surface. Mr Hay has shown beyond any reasonable doubt that the objects are where they were left by man and were not washed down from the hills into their present position. Many figurines of this type were found much larger than those hitherto excavated. These were often covered with white paint, and showed no signs of being water-worn. Several excavations were made on the ranch of Don Julio Diaz near the station of Naucalpan on the road to Toluca, and also on the slopes of the hill of Los Remedios. A most interesting collection of very large figurines of the "tipo arcaico" were found in these places, seldom deeper than 1.25 m. from the surface.

Collections of the same type were also obtained from Contreras, Texcoco, Zacatengo and the hills of Guadalupe, Peñon de los Baños, San Angel, and Coyoacan. Mr Hay has figurines and pottery closely resembling the primitive type which he found at Cuatololapan in the State of Vera Cruz. He also has a figurine from Guatemala which seems clearly to belong to the same type. Photographs of several images taken

by Mr Pablo Henning in Salvador show a strong resemblance to the "tipo arcaico" of the Valley of Mexico. It seems clear that we shall have to extend the limits of this primitive type as far to the east as it has already been extended into Colima and Michoacan on the west. The presence of similar types far to the south may show that we have here something representative of that early stage of culture which spread over the whole of Middle America and from which the various cultures now known as pre-Nahua, Zapotec, and Maya have sprung.

The Director and Mr Gamio, one of the Mexican Fellows, investigated two sites in the village of San Miguel Amantla from a stratigraphical point of view, endeavoring to trace the course of the ancient river-bed. The results were not satisfactory, as the trenches, although continued for some distance, failed to show the banks of the river. Much water-worn pottery sherds and a few figurines of the "tipo arcaico" were found.

The greater part of the time was spent in excavating a "cerrito" a short distance west of the village of Santiago Ahuitzotla. The site proved to be of some importance, and I am glad to state that through the initiative of Señor Manuel Gamio, the Inspector of Ruins, the excavations have been taken over by the Government of Mexico and made a "national monument." The site was found to cover an area of about 1,000 square meters. Floors on three distinct levels were found. From the position and character of the objects found it seems clear that the main portion of the site dates back to early pre-Aztec times. It continued to be occupied, however, into the Aztec period. The lowest floors are badly damaged. They were followed in all directions by means of tunnels. The main edifice is on the second floor level and was completely uncovered. The walls and floors are well preserved. This building, 17 meters square, is surrounded by a low stone-faced terrace. To the north and south of the main structure other rooms were found. There is a striking similarity between the room plans on this level and those of the rooms excavated near the pyramids at San Juan Teotihuacán. The highest level floors date only from Aztec times. These were only a few feet beneath the present surface of the ground.

A large collection of all the main types of pre-Aztec and Aztec pottery and figurines was made. The greater part of the earlier type came from four well-like reservoirs beneath the floors and from large ash deposits under the floor of the southern rooms. The excavation of this "cerrito" shows the importance of a systematic investigation of the large number of other artificial mounds scattered over the Valley of Mexico. As a beginning of this work Señor Rodrigo Gamio is at work

upon a map of the Valley with the sites already explored by the Government and by the School and those awaiting exploration.

Respectfully submitted,
ALFRED M. TOZZER,
Director

CAMBRIDGE, MASSACHUSGTTS,
14 October, 1914.

DISCUSSION AND CORRESPONDENCE

The Eskimo Screw as a Culture-Historical Problem

The highly interesting article of Mr Morten P. Porsild, *The Principle of the Screw in the Technique of the Eskimo*,[1] is fully entitled to the serious attention of all students interested in technology and the general development of human culture. The positive conclusion that "the principle of the screw is an old and original invention of the Eskimo, executed by a method of his own," indicates a problem of so great importance, that it cannot be left unnoticed or viewed with indifference by the historian of civilization. It is from the latter's point of view that I wish briefly to discuss the problem raised by Mr Porsild, and the remarkable conclusions reached by this scholar. By way of apology, I feel I have to state at the outset that I thoroughly disclaim any special knowledge of the Eskimo and their culture, and that the insignificant knowledge I may have of the subject is solely based on accessible literature and museum material. In anticipation, however, of criticism of my opinion on the part of students of real Eskimo life, which I should certainly be pleased to receive, I may say that my sympathy for this admirable people is no less than their own, and that my views are not biased by any sentiment in the matter. The principal question which I endeavor to answer for myself, and for others similarly inclined, is, Will the universal history of human culture be able to accept Mr Porsild's result as a definite fact, and how will it be reconciled or assimilated to other allied facts known to us? In other words, what is the position of the Eskimo screw in the general history of this mechanical device? And if it be true that the screw is an original and independent contrivance of the Eskimo, how will the previous views held concerning the development of the screw be affected or modified by the amazing thesis of Eskimoan originality? In using the word "amazing," I strike a keynote untouched by Mr Porsild. Amazing it is, because the Eskimo are the only known primitive tribes in the world acquainted with the application of the screw; and not only that, even the most advanced civilizations of antiquity—like those of ancient Egypt, Mesopotamia, India, and China—have never as yet yielded the slightest trace that would reveal any familiarity with

[1] *American Anthropologist*, N. S., vol. 17, pp. 1–16.

a screw device. The Chinese, we know positively, never were acquainted with it, but learned it only in the possession of Europeans, and have not yet adopted it in their home industries. The screw is an exclusively and decidedly European invention, peculiar to the Mediterranean culture area, in all probability first conceived by Greek mechanicians approximately in the second or first century B.C. It represents one of the most recent, if not the very latest, of all human implements. In view of these facts, which are here cited merely for preliminary information, the problem of the Eskimo screw does not appear to me so simple and so easy of solution, but, on the contrary, extremely complex; and the whole question merits renewed and more profound discussion in the light of the history of the screw.

Before entering on this subject, I may be allowed to add some bibliographical references which seem to have escaped the attention of Mr Porsild. In 1901, E. Krause, at the Museum für Völkerkunde in Berlin, published a brief article on the Eskimo screw.[1] He spontaneously discovered the screw in three arrow-heads with points of reindeer-antler, collected in 1882 and 1883 by Captain J. A. Jacobsen at Singrak, Alaska. These are well figured and described in his article. Krause made a plea for the native origin of the screw, though the interrogative form of the title of his article shows that he was not fully confident of his proposition. He advanced two reasons which induced him to ascribe the invention to the Eskimo: if the Eskimo screw had originated in imitation of an introduced screw, it would certainly have received more threads, in harmony with the latter, instead of only the one which it has; there are further rudimentary screws forming a missing link between the pegs with a single thread and the usually conical or also double-conical peg of the arrow-heads. Krause's opinion was immediately antagonized by K. von den Steinen,[2] who most emphatically denied that the Eskimo ever invented the screw. This ethnologist adopted an historical point of view in the study of the subject, without, however, citing positive and specific historical facts which would substantiate his theory that the Eskimo screw is the result of attempts to reproduce imported European models. He generally invoked the commercial intercourse of the Alaskan Eskimo with Chukchee and Russians, and, among other things, appealed to a deserted and well-preserved telegraphic station on Bering Strait, erected in 1867, and visited by Jacobsen.

[1] "Die Schraube, eine Eskimo-Erfindung?" *Globus*, Vol. LXXIX, 1901, pp. 8–9 (7 figs.).

[2] "Die Schraube, keine Eskimo-Erfindung," *Globus*, Vol. LXXIX, 1901, pp. 125–127 (9 figs.).

The fact that the Eskimo opposite the Asiatic East Cape, twenty years ago, had ample opportunity of acquainting themselves with European screws, cannot be contested, Von den Steinen concludes. This possibility nobody will deny, but possibilities are not historical facts. The question first to be answered would be, Were screws of European or American origin ever actually found among the Alaskan or other Eskimo? The present evidence, as conscientiously gathered by Porsild, surely points to a far greater age of the screw than a mere score of years. It was the merit of Von den Steinen at that time, however, to have increased the material available for discussion by thirteen interesting objects. Among these are arrow-heads from graves in the western part of Greenland, showing well-developed screws. This afforded Von den Steinen occasion for the conclusion that, if it is difficult to believe in the Eskimo invention of the screw, it is indeed impossible to assume that it should have been invented by them twice,—once in the west, and once more in the east,—and in both cases in those localities where they were well acquainted with European iron-ware. The left-handedness of the Eskimo screw was explained by Von den Steinen in the same manner as by Ryder and Porsild. He figured also a wooden pole in which a right-handed screw of fourteen rather regular grooves is carved,—very similar to the object illustrated by Porsild in Fig. 7. In conclusion, he generalized that the Eskimo were particularly gifted at learning technical stunts from Europeans, as emphasized by observers; the screw is merely an occasional and sporadic application of an introduced technique, whose influence on the Eskimo we are perhaps inclined to undervalue also in other lines. None of these arguments, to which we shall revert further on, really hits the case, and none is convincing to me.

Half a year later Miss H. Newell Wardle of Philadelphia took the platform.[1] She reviewed Eskimo material in the Museum of the Academy of Natural Sciences, Philadelphia, and rejected Von den Steinen's views, for the reason that the same ideas must originate in the same states of culture or in similar environments, intellectual or economic. "The intellectual abilities of the Eskimo cannot be doubted, their inexhaustible ingenuity has astounded all observers, and even the Aryan did not think it below his dignity to appropriate the more perfect harpoon of his 'barbaric' brother whale-hunter." Miss Wardle tried to explain the left-handed Eskimo screw from the spirally twisted tusk of the narwhal, which the people should somehow have attempted to imitate. This suggestion, however ingenious, is not plausible; we may even say it is rather improbable.

[1] "Die Eskimos und die Schraube," *Globus*, Vol. LXXX, 1901, pp. 226–227 (3 figs.).

If the Eskimo are acquainted with the screw, the main question that arises is, What relation does it bear to the European screw? And what is the history of the latter? We have no opportunity of studying the gradual development of this device, like that of so many other implements. It all of a sudden appears as an accomplished fact, scientifically understood and applied. Its first description and illustration, at once intelligent and scientific, we owe to the genius of Heron of Alexandria, instructor of a school for mechanicians and surveyors, and the most prominent physicist produced by the ancients. His lifetime is not exactly ascertained; but, in the judgment of the latest and most competent scholars, he lived in the second half of the second century B.C., while others assign him to the first century A.D.[1] The Greek original of Heron's work on mechanics is lost; but it is preserved in an Arabic translation, ordered by the Caliph Abu'l Abbās Ahmed Ibn al-Mutasim (833–842), and extant in four manuscripts (Leiden, British Museum, Constantinople, and Cairo).[2] The screw,[3] according to Heron, forms the fifth of the six mechanical powers, and is theoretically explained from a cylinder moving over a plain. A side of the cylinder is supposed to be in motion, and a point to move on this side from its extremity; this point runs through the whole side in the same interval as it takes this side to turn once around the surface of the cylinder and to come back to its starting-point. The curve described by this point on the cylindrical surface is the thread of a screw, designated as the screw. Then Heron proceeds to describe minutely the making, use, and properties of screws, single, and in combination with other mechanical powers.[4] The most interesting of these instruments is the screw-press employed in the production of olive-oil.[5] Oil being one of the chief articles of food among the ancients, the mechanical improvement of the oil-presses was a matter of large bearing upon economic progress. Pliny[6] informs us that

[1] W. Schmidt, *Heronis opera*, Vol. I, p. XXIV (Leipzig, 1899).

[2] First edited by Carra de Vaux, *Les mécaniques ou l'élévateur de Héron d'Alexandrie publiées pour la première fois sur la version arabe de Qostà ibn Luqâ et traduites en français*. Paris, 1894 (Extrait du *Journal asiatique*). Best edition by L. Nix in Nix and Schmidt, *Heronis opera*, Vol. II, fasc. 1 (Leipzig, 1900).

[3] Greek *κόχλος* or *κοχλίας* (Latin *cochlea*), which originally means "a snail with a spiral shell." The female screw is *περικόχλιον*; Latin has no word for the latter.

[4] Carra de Vaux, *l. c.*, pp. 101–106; Nix, *l. c.*, pp. 104–112. A small portion of Heron's work on mechanics is preserved in the "Synagoge," the mathematical collectanea of Pappus of Alexandria, who lived under the Emperor Diocletian (285–305). Among these fragments is also the description of the screw (Nix, *ibid.*, pp. 283–291).

[5] Nix, *ibid.*, pp. 240–252 (with two illustrations).

[6] *Nat. hist.*, XVIII, 74, § 317 (ed. Mayhoff, Vol. III, p. 231).

the ancients used to hold down the press-boards with ropes and leather thongs, wrought by levers; that within the last hundred years the Greek press (*Graecanica*) had been invented, in which the grooves of the male screw pass through and around the female screw;[1] and that only within the last twenty-two years had a less unwieldy press with smaller boards been contrived. In this apparatus the stem of the screw was placed in the center. The screw was directly utilized in the act of pressing, the whole pressure being concentrated upon broad planks placed over the olives or grapes. Representations of presses have come down to us on wall-paintings of Pompeii; for instance, a clothes-press, which is worked by two upright screws, precisely in the same manner as our own linen-presses.[2]

Besides the screw-press, the ancients were acquainted likewise with the employment of screws for magnifying a motion and rendering it easily manageable and measurable,—the same principle as we still apply in the screw-feet of instruments of precision. The vaginal specula of the Roman surgeons were provided with screws to open or close the bows of these instruments according to need. Three specimens discovered in Pompeii are in the Naples Museum. They are illustrated and described by J. S. Milne.[3] In one of these, 23 cm. long, the blades are at right angles to the instrument, and when closed form a tube the size of the thumb. On turning the screw, a cross-bar forces the two upper blades outward till sufficient dilation is secured for operative purposes. In

[1] This passage offers many technical difficulties, the discussion of which would be out of place here. I have adopted the interpretation of H. Blümner (*Technologie und Terminologie der Gewerbe und Künste bei Griechen und Römern*, Vol. I, 2d ed., p. 348). According to Nix and Schmidt (*Heronis opera*, Vol. II, p. 388), who reproduce the text of Pliny, this kind of press survived in the Canton of Graubünden till the seventeenth and even the nineteenth century.

[2] Figured by Blümner, *l. c.*, p. 188; Overbeck-Mau, *Pompeji*, p. 393; W. Smith, *Dictionary of Greek and Roman Antiquities*, Vol. I, p. 464. Aside from Pliny, the screw is mentioned by the architect and engineer Vitruvius (*De architectura*, VI, 7, 3), who lived in the first century B.C.; it was therefore known to the Romans before Pliny's lifetime. In the translation of M. H. Morgan (Vitruvius, *The Ten Books on Architecture*, p. 184, Cambridge, 1914) the passage runs thus: "The pressing room itself, if the pressure is exerted by means of levers and a beam, and not worked by turning screws, should be not less than forty feet long, which will give the lever man a convenient amount of space." E. Krause, accordingly, in his article in *Globus* cited above, was entirely misguided in asserting that "the Eskimo had advanced much further than the highly cultivated and over-refined Romans in the age of the imperium; for despite their progressive culture they did not know the screw." K. von den Steinen, in his reply, quoted this observation without adding any comment.

[3] *Surgical Instruments in Greek and Roman Times*, pp. 151, 152 (Oxford, 1907).

another, on turning the screw, the lower blades could be drawn downward, at the same time separating slightly, while the upper blades diverged also. In one instrument the screw is left-handed; in another, right-handed. Paulus of Aegina, a celebrated physician of the seventh century A.D., in his description of the speculum, does not fail to call attention to the screw, which he says is to be turned by the assistant, while the speculum itself is to be held by the operator.

As to the further history of the screw,[1] it may suffice for the purpose in view to emphasize two important facts,—first, that the Romans passed the principle of the screw on to the peoples of central Europe, to whom it was a foreign affair; in short, that the modern development of the screw is an inheritance of classical antiquity; and, second, that the Arabs derived their knowledge of it from the Greeks. Reference has already been made to the Arabic translation of Heron's fundamental work on mechanics, in which the principle and application of the screw are described theoretically and practically. The most prominent of the native Arabic works on technology is the *Mafātīh al-ulūm* (*Keys of the Sciences*), by al-Khārizmī, a mathematician who lived about 820 under the caliphate of Mamun. He describes the screw (*al-laulab*) as a well-known contrivance employed by carpenters and architects in laying foundations; and he mentions the oil-press in conformity with Heron, his term for the latter, *al-gālājarā*, being reproduced from the Greek γαλεάγρα.[2] The history of the screw, accordingly, presents an unbroken chain of development which is well determined within the area of Mediterranean

[1] A history of the screw has not yet been written. What F. M. Feldhaus (*Technik der Vorzeit*, col. 981, Leipzig, 1914) offers on this subject can hardly be looked upon as a useful or trustworthy contribution, as it suffers, like many articles in this technological dictionary, from serious defects, lack of criticism and historical sense, misinformation and inaccuracy. The so-called Archimedean screw (see Blümner, *l. c.*, Vol. IV, pp. 121–126; and C. G. de Montauzan, *Essai sur la science et l'art de l'ingénieur aux premiers siècles de l'empire romain*, pp. 90–91, Paris, 1908), which is a spiral pump for raising water, with a pipe coiled like a screw, is not to be connected with the history of the screw proper, as asserted by Feldhaus; still less so what he styles the peculiar thread of a screw in the spindle whorls of the Himalaya. These whorls are quite familiar to me, and are decorated with grooves of concentric circles which have nothing to do with the threads of a screw. According to Feldhaus, the screw-line occurs as ornament as early as the bronze age, particularly in the large rings for the neck. Such twisted metal rings, as occur also in China in the form of bracelets or in the handles of vessels, are modelled after ropes, and, at any rate, bear no relation to a screw. The fundamental passages of Heron's work on mechanics are not pointed out or discussed, while reference is made to an incidental mention of the screw in his *Pneumatica*.

[2] E. Wiedemann, "Zur Mechanik und Technik bei den Arabern" (*Sitzungsber. phys.-med. Soz. Erlangen*, Vol. 38, 1906, p. 21).

civilization. The screw is not an invention of primitive man: in the works of ethnologists (for instance, in those of Lubbock, E. B. Tylor, O. T. Mason, H. Schurtz, etc.) it is conspicuous by its absence. Neither is it a prehistoric invention: prehistoric archeology is reticent about it. It is a comparatively late invention of historical times, appearing under the full searchlight of history. The ancient Greeks and Romans, as well as the ancient Egyptians, were still in complete ignorance of it, till it unexpectedly came to light in the Alexandrian epoch. We cannot say exactly when, where, and under what circumstances, the idea sprang up. Certain it is that the first invention was conceived on Egyptian soil, perhaps within the precincts of Alexandria, by men of thorough mechanical training, presumably those attached to or in close touch with the scientific schools of the great Hellenistic emporium. We hear nothing of experiments gradually leading to the idea: it was born like Pallas Athene from Jupiter's head,—a clear, self-conscious, and accomplished fact. Whether those mechanics were Egyptians or Greeks (Heron was probably an Egyptian) cannot be decided, either. The only safe formula to express the event is that the invention was accomplished within the time and boundary of Hellenistic civilization in Egypt, during the second or first century prior to our era. In the first century B.C. it spread from Egypt or Hellas to Italy. We further note that the screw then was not an accidental or passing toy, but, as a matter of necessity, was applied with perfect logic and volition to machines or instruments, which without it were clumsy and inefficient, and which in combination with it were suddenly turned into highly useful and time-saving devices, denoting a rapid step of technical and economic progress.

In applying this lesson to the Eskimo screw, we fail to see this idea of absolute necessity, essential function, and technical progress, in the adoption of the screw, however manifest its purpose may be. The Eskimo implements provided with this device are not only conceivable without it, but, in the case of the arrow-heads and plugs, in fact are so made. There is no Eskimo implement in which the screw fulfills so indispensable a function that it would not be equally effectual if it were devoid of it. In the mechanical contrivances of the ancients we readily recognize the motive prompting the introduction of the screw, while the motive is not conspicuous in the Eskimo screw devices; at least, students of Eskimo culture have not yet discussed this side of the question. Another point to be noticed is that Eskimo knowledge of the screw is somewhat limited or one-sided, inasmuch as only the male screw, not the female screw, is known to them; and in case the theory of indigenous

origin can be upheld, more stress should be laid on the study of the diversity of Eskimo screws from our own. Our inquiry bears out the fact that the Eskimo screw is an isolated and exceptional case in ethnic life, outside of our own culture sphere; and this is the very reason why the case is so intensely interesting and sympathetic. If the originality of this invention among the Eskimo could unobjectionably be proved, the case would certainly be remarkable, and would considerably affect and influence our opinions regarding analogous phenomena. It would stand out as an illustration of the first order, of independent invention. In view of this significance, however, we must insist on intrinsic and clean-cut evidence which is acceptable to the thinking majority; while at the outset such broad generalizations, based on theorizing speculations, as those advanced by Von den Steinen and Miss Wardle, should be strictly barred. The conclusion, for instance, that the Eskimo could not have invented the screw, because many other peoples of a higher degree of culture never invented it, and because this supposition would seriously disturb the circle constructed by us for the history of "our" screw, might prove also a fallacy, although the extraordinary isolation of the Eskimo screw remains a fact not easily to be disregarded. Everything is possible, and nothing is impossible. The possibility that the Eskimo might have conceived the principle of the screw independently must plainly be admitted. I for my part not only admit this, but even wish that definite proof might soon be established beyond any doubt. For the present, however, I have to confess that, despite all the meritorious efforts hitherto made, exact evidence in favor of Eskimo originality does not yet seem to me to be satisfactory or positively assured. We have had expressions of opinion from our prominent Eskimo scholars —opinions highly valued, as they are based on solid information—but we have not yet heard from the Eskimo themselves, who should be induced to take the witness-stand in their own defence. May I venture to suggest to Mr Porsild, who apparently is stationed among the people in Greenland, that he question his friends as to their knowledge of the bolder man, who, as the first among them, ventured on the manufacture of a screw, and what reasons prompted him to embark on this scheme? Should the folklore of the Eskimo not make any allusion to this device? Also they may be able to throw some light on the possible interrelation of it and the narwhal-tooth suggested by Miss Wardle, though this idea appears somewhat romantic. The evidence, as summed up by Mr Porsild on p. 15, is not wholly convincing; at least, not to an outsider, who, like the writer, is willing to be convinced. The utmost

concession I can make to him is, that his conclusion is a theory—a very attractive and suggestive one, to be sure—but certainly it is very far, as asserted by him, from becoming a fact which might readily be accepted by science. The "facts which lead to the belief that screw-bearing implements were made before the advent of Europeans into West Greenland," strictly speaking, are not facts, but suppositions elicited from certain observations, and formulated in a somewhat dogmatic manner. The linguistic evidence gives rise to suspicion. The lack of a proper word for the screw, though not conclusive, augurs a serious defect; at least, it is disappointing. If it existed, if it were named, for instance, "narwhal-tooth," in analogy to the Greek "snail,"[1] my faith in the theory of indigenous invention would be considerably strengthened. It is certainly possible that the lacunae still existing in our knowledge of the subject (lack of necessity and motive, absence of direct Eskimo information, deficiency of circumstantial evidence), and militating against the opinion of native invention, will be filled in the course of time; but, as long as these postulates are not satisfied, it will be safer to hold judgment in abeyance.

While, on the one hand, I am of the opinion that the case of those pleading the aboriginal invention of the Eskimo screw is not yet substantially backed up, I must confess, on the other hand, that the argumentation of Von den Steinen, who, as far as I know, is the only one to take the opposite stand, is weak, and does not at all carry conviction with me. Von den Steinen would have us believe that the Eskimo of Alaska and those of Greenland, independent of each other, constructed the screw in imitation of foreign products; but he omits to tell us why this double attempt at imitation yielded exactly the same results, and, while there is no other example of a primitive tribe which made a similar effort, the Eskimo in two widely different regions and at different times should have successfully performed the same experiment twice. This point of view seems to me more miraculous than the supposition of the native origin of the screw; it even seems to me to be inspired by poetic rather than scientific insight. It is inconceivable to me that this process of imitation should have taken place at various times and in various localities. If imitation it is, this act must be reduced to the experience of a single primeval occasion, which takes the responsibility for all subsequent instances. With Boas and Porsild, I concur in the opinion that

[1] This, of course, would not mean that Miss Wardle's theory has the right of existence. The ancients did not learn the principle of the screw from the snail, but merely termed it for the snail by way of comparison.

we have to do with a uniform phenomenon affecting all Eskimo tribes alike; and these scholars are certainly justified in regarding its wide geographical distribution and its occurrence in isolated places and ancient sites as symptoms of a certain antiquity.

Thus far we have been confronted with two opinions diametrically opposed,—the declaration of independence and the imitation theory. There remains, however, a third point of view to be taken into consideration. Let us start from an analogous case. The wood-carved snow goggles of the Eskimo with narrow horizontal slit, commanding a sufficient range of vision, without any doubt, represent spontaneous and indigenous invention of this people. Besides this type of goggles, there is another one with two large apertures assuming the outline of the eyeballs, and covered on the inner side with sheets of American or European glass.[1] The latter type, in my opinion, is the result of an adaptation (probably recent) to European-American spectacles or goggles. Accordingly we here face a foreign idea grafted upon an object of old native manufacture, and seemingly producing a net result which might lead the casual observer to condemn the whole affair with the sweeping judgment of being due to an outside impetus. But we have only to study carefully the large varieties and variations of slit-goggles in order to become convinced of the utter baselessness of such a grotesque generalization. This example illustrates that native inventiveness does not preclude the reception of foreign technical features, if these are apt to improve the object or to be pleasing to its makers. An allied process may have been in operation in the case of the screw. Granting the possibility of the comparatively great antiquity of the latter, two characteristics are discernible which in my opinion would speak in favor of a germ of native pre-invention. These are the simple single-threaded screw first emphasized by Krause, for which, as far as I know, no analogy exists in our technique, and the screw-like designs cut into the wedge-shaped plugs for closing the wounds of the seal. In the variations of the latter implement, the history of the development of the technique is perhaps preserved. We note plain pegs, those provided with horizontal, parallel grooves, and those with grooves cut spirally.[2] Did the screw of the latter, perhaps, result from the design of grooved circles? This primitive

[1] This observation refers to three goggles in the collections of the Field Museum, Chicago (Cat. Nos. 13820, 20288, and 53295), from the Alaskan Eskimo. Also O. T. Mason ("Primitive Travel and Transportation," *Report of U. S. Nat. Mus. for 1894*, pp. 293, 294, 296) has pointed out this type as a "modern adaptation."

[2] Compare Boas, "Eskimo of Baffin Land and Hudson Bay" (*Bull. Am. Mus. Nat. Hist.*, Vol. XV, 1901, p. 21); and Porsild, *l. c.*, p. 12.

foundation being given, foreign ideas could have been adapted to or transplanted on it. After all, it remains an open question whether the Eskimo screw, technically speaking, may not have had an origin different from that of our own. The fact that it is this very origin which is still shrouded in mystery accounts for the obscurity from which the whole subject labors, and for the variation of possible opinions.

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THE "RED PAINT PEOPLE" OF MAINE.

In justice to New England archeology I cannot let pass unnoticed the communication of your correspondent on page 207 of the preceding number of the *American Anthropologist*. Mr Bushnell says: "The graves discovered by Mr Moorehead on the coast of Maine differ in no respect from those rifled by the Pilgrims near the present Provincetown." This is a statement which facts do not justify. The grave at Cape Cod to which Mr Bushnell especially refers is described by the Pilgrims as follows:[1]

Wee found a place like a graue, but it was much bigger and longer than any that we had yet scene. It was also covered with boords, so as we mused what it should be, we resolved to digge it vp, where we found, first a matt, and vnder that a fayre Bow, and there another Matt, and vnder that a boord about three quarters long, finely carued and paynted, with three tynes, or broches on the top, like a Crowne; also betweene the Matts we found Boules, Trayes, Dishes, and such like Trinkets; at length we came to a faire new Matt, and vnder that two Bundles, the one bigger, the other lesse, we opened the greater and found in it a great quantitie of fine and perfect red Powder, and in it the bones and skull of a man. The skull had fine yellow haire still on it, and some of the flesh vnconsumed; there was bound vp with it a knife, a pack-needle, and two or three old iron things. It was bound vp in a Saylers canvas Casacke, and a payre of cloth breeches; the red Powder was a kind of Embaulment, and yielded a strong, but no offensiue smell; It was as fine as any flower. We opened the lesse bundle likewise, and found of the same Powder in it, and the bones and head of a little childe; about the leggs, and other parts of it was bound strings, and bracelets of fine white Beads; there was also by it a little Bow, about three quarters long, and some other odd knackes; we brought sundry of the pretiest things away with vs, and covered the Corps vp againe. After this, we digged in sundry like places, but found no more Corne, nor any things els but graues: There was varietie of opinions amongst vs about the embalmed person; some thought it was an *Indian* Lord and King: others sayd, the *Indians* haue all blacke hayre and never

[1] *Journal of the Pilgrims at Plymouth*, Cheever reprint, p. 38.

any was seene with browne or yellow hayre; some thought, it was a Christian of some speciall note, which had dyed amongst them, and they thus buried him to honour him; others thought, they had killed him, and did it in triumph over him.

Mr Bushnell also says: "We have no mention of pottery vessels occurring in these graves." On the contrary, the Pilgrims found an earthen vessel on one of the two graves opened and described by them, as will be seen by the following:[1]

We found a little path to certaine heapes of sand, one whereof was covered with old Matts, and had a woodden thing like a morter whelmed [overturned] on the top of it, and an earthen pot layd in a little hole at the end thereof; we musing what it might be, digged & found a Bow, and, as we thought, Arrowes, but they were rotten; We supposed there were many other things, but because we deemed them graues, we put in the Bow againe and made it vp as it was, and left the rest vntouched, because we thought it would be odious vnto them to ransacke their Sepulchers.

The only resemblance between the graves at Cape Cod and those in Maine was the presence of red paint in one of the former, and while this pigment occurred in considerable quantities in nearly all of the many graves opened in the red paint cemeteries in Maine, its presence is certainly not a characteristic of the later Algonkian graves in New England which contain skeletons. In nearly all of the graves of the later Indians explored by the Peabody Museum, red pigment has not been found, and I have personally opened a number of these in Maine, New Hampshire, and Massachusetts without, so far as I can recall, finding a trace of red paint. Moreover, the occasional use of red paint in burials is common among many tribes and its occurrence in the historic grave at Cape Cod has no ethnic significance whatever. Its presence, however, in such quantities in practically all of the graves of the red paint cemeteries is remarkable. It is probable that similar conditions would be found if a prehistoric cemetery of the Beothuk Indians of Newfoundland were explored, for this people, known as Red Indians by the early explorers, were so called, not because they were naturally of this hue, but for their universal custom of coloring their skin, their garments, canoes, bows and arrows, and all utensils belonging to them with red ocher. The aboriginal everywhere loved red paint and he used it whenever he could obtain it.

The term "Red Paint People" was, if I am not mistaken, first applied by Professor Arlo Bates of the Massachusetts Institute of Technology, whose good work in the Maine shell-heaps is well known

[1] Ibid., p. 33.

to local archeologists. While of no ethnic significance, the term is a convenient one as used in New England archeology, but perhaps it cannot be fully appreciated by those who have had no personal experience in exploring these cemeteries. New England archeologists will, I am sure, be grateful for the suggestion of a better designation.

The Maine cemeteries explored by me in 1892 and 1894,[1] by Mr Marks in 1895, and by Mr Moorehead in 1912–14,[2] in which, owing to their age, the skeletons had wholly disappeared, were especially remarkable for the great number of stone implements found. Many of these implements were of types unknown in later graves containing skeletons that may be attributed to Algonkian tribes found by the whites occupying New England. Most of the implements may be included under the following divisions: fire-making stones, originally pieces of iron pyrites which owing to the age of the graves had in every instance disintegrated or undergone chemical change; chipped knives and spear points of the ordinary forms; beautifully fashioned and polished slate arrow and spear points; many pear-shaped pendants or "plummets," some of them carved to represent a fish; and a great number of adze blades of various forms and sizes with cutting edges straight or of various degrees of curvature. From 192 of the 246 graves opened by me and by Mr Moorehead, 374 adze blades were taken. Some graves contained but one blade, others as many as ten. No pottery vessels, either whole or in fragments, were found in the graves or on the surface. Tobacco pipes, and stone pestles for grinding corn were also absent. These together with pottery vessels are found frequently in the later Algonkian graves. Although the straight or nearly straight-edged stone adze blade was common to many American tribes and other primitive peoples, in New England and the adjacent territory, we have a development of this implement which is not equalled in other sections of the world, so far as is known.[3] The blades occur in remarkable variety and in many sizes, with edges ranging from straight, through various degrees of curvature, to a half circle. They range from the heavy, narrow-edged type evidently fashioned for cutting heavy timber, to the delicate edged forms probably used for finishing various wooden objects. Some of these blades have knobs or a groove at the back for securing the lashing with

[1] Willoughby, *Prehistoric Burial Places in Maine*, Arch. and Eth. Papers of the Peabody Museum, Harvard University, Vol. I, No. 6.

[2] Moorehead, *The Red Paint People of Maine*, Am. Anthropologist, Jan.–Mar., 1913, p. 33.

[3] Willoughby, *The Adze and the Ungrooved Axe of the New England Indians*, Am. Anthropologist, Vol. 9, p. 296.

which they were fastened to the haft. They are, like the modern steel adze, chisel, and gouge, adapted to a great variety of wood working, although in some instances the work was probably hastened by charring the wood.

These adze blades are very common in New England. They occur in certain sections of New York and in portions of the St Lawrence Valley, also in New Brunswick, Nova Scotia, and Newfoundland. From information received from time to time I feel sure that the blades collected as surface finds in southern New England, were ploughed from shallow graves similar to those in the Maine cemeteries. I also feel certain that graves containing similar implements will be found in Nova Scotia, New Brunswick, and Newfoundland. To a student of primitive technology these highly specialized blades suggest a remarkable development in wood working by the early inhabitants of this region. Outside of this locality, so far as is known, the highest development of the stone adze was among the Haida, Tlingit, and other Northwest Coast tribes where the art of working in wood had reached a high degree of excellence. Certain types of blades which are found both in New England and the Northwest do not occur elsewhere, and while practically all of the types of the Northwest are found in New England, there are several highly specialized forms in the latter locality which do not occur in the Northwest.

It seems, therefore, that we have good evidence here of a people highly skilled in working wood on a scale equalling, if not surpassing, the Indians of the Northwest. Like the latter people these early New Englanders apparently made no pottery.

With our present knowledge I will not attempt to establish the relationship of this early people with any historic tribe. They may or may not have been the ancestors of the Beothuk or of some Algonkian division. A careful study of available data, however, seems to indicate that they were not contemporary with the Algonkian tribes whose refuse piles form most of the shell-heaps along the New England coast.

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HOME STUDY IN ETHNOLOGY

THAT the ethnologist or ethnographer is given to wearing spectacles of colored glass, the "specs" of his own culture, none, I may assume, will dispute. Nor is comment worth while, in regard at least to the inadequate observation of unfamiliar facts or their misinterpretation. Of our failure to observe facts too familiar for observation or to free our-

selves of popular sociologizing we may be less aware. Let me give illustrations. I will take them from marriage.

What once put so much vitality into the promiscuity theory? Certainly not facts. Rather certain popular preconceptions the ethnologist was unwittingly influenced by—the preconceptions that social order proceeds from disorder, that the savage is an erratic, undisciplined creature, passionate and ever lustful, and that man, civilized as well as "wild," left to himself, untrammeled by the legal bonds of marriage, will fall back into promiscuity the very moment the occasion offers. Because the ethnologist had been brought up in the idea that the alternative to marriage was "free love", he confided in the theory of marriage as a development from promiscuity.[1]

This same preconception has made him not only hasty about the origin of marriage but unobservant of its form or nature. The actual amount of monogamy in a group where there is some polygyny, the reasons for polygyny, the economic or political status of those practising it, to what extent it is merely nominal, all these features likely as not he fails to note, I suspect, because of his fixed notion that man being *naturally* a polygynist he will indulge himself with more than one wife whenever he is allowed.

As to the nature of marriage, because at home marriage to him is just marriage, and one married person very much like another, abroad he rarely observes the relations between husband and wife at all—the kind of companionship they have, or the lack of it, how much they talk together and what about, their formulas, their manners, the difference between their behavior when alone and when in the presence of others,—not to speak of all these matters as they are complicated by polygamy.

Or take the circumstances of divorce. In his own society divorce is so final a break, he fails to note whether or not it is in other societies. Do divorcés ever speak when they meet? Just now I can remember but a single reference to the behavior of divorcés in primitive circles. Among the Yuchi Indians we are told that a man must never speak to his ex-wife under any circumstances as it would lessen her chance with

[1] For a particularly naïve example of this connection see Müller-Lyer, *Die Familie*, p. 47. Munich, 1912. If modern constraints—economic, legal, religious, and moral, fail to ensure monogamy, Müller-Lyer argues, in the beginning of society, those constraints lacking, promiscuity must have prevailed. But supposing the great constraint towards monogamy now and always, is habit, and economic, legal, religious and moral constraints merely the buttresses of habit, the justifications, would it seem so necessary to hypothecate promiscuity as a first stage?

other men.[1] Would it not be interesting to know whether this Yuchi point of view is unique or whether it is general? It might at least help us understand some of our own little jokes.

But for the moment I am more concerned with the view of how our own jokes may help us understand the Yuchi. Nor am I forgetful of the orthodox warning against interpreting other cultures in terms of our own, against deliberately putting on the aforesaid colored glasses. It was a very proper warning indeed, given the kind of glasses we wore, a fit caution to the unmitigated legalists and rationalists we once were, utterly unable to interpret our own culture. But nowadays, having acquired a sounder psychological point of view through a study of other cultures, it may be possible for us to become ethnologists at home. Then field-work, I venture to predict, will become greatly enriched in its turn by home study.

ELSIE CLEWS PARSONS

SOME ADDITIONAL NOTES ON THE LANGUAGE OF THE NATIVES IN THE PATAGONIAN CHANNELS

SOME time after I had published my observations on the natives of the Patagonian channel region,[2] I had an opportunity to study the relation of Dr Coppinger's journeys[3] more carefully. I undertook to compare his small vocabulary with my own and with Hyades' and Fitzroy's lists. The result of this comparison is of some little interest. The vocabulary in question was obtained by Dr Coppinger in Tilly bay situated on the north coast of Santa Inez island in the Straits of Magellan (opposite Jerome channel), thus within the land of the Channel Indians, and the range of the plank canoes (such are also mentioned by Dr Coppinger). The list comprises only fifty words; thirty-three of them are also translated in my vocabulary, for the remaining seventeen I did not happen to get the Indian equivalents. Of those thirty-three words, I can identify, with more or less certainty, seventeen; the other sixteen are widely different; nor do they seem to correspond with words in any other of the Fuegian tongues.

Below is a list of the seventeen corresponding words: C = Coppinger, S = Skottsberg.

basket: *dawyer* (C), *tă'ju* (S).
canoe: *ayoux* (C), *kiā'lu* (S).

[1] Speck, F. G., *Ethnology of the Yuchi Indians*, p. 95, Anthrop. Pub. Univ. Pa. Mus., I.

[2] *American Anthropologist*, October–December, 1913, pp. 578–616.

[3] Cruise of the "Alert," London, 1883.

dog: *sharkiss* (C), *ča'lki* (S).
finger-nails: *tharsh* (C); S. has *táü'xlxa:rkl* for finger, *jekl* for nail. There is a considerable resemblance between *tharsh* and *tauxl*, for it is to be remembered that Coppinger's *th* does not signify any of the various English *th*'s, but *t, h*.
foot: *kadthakous* (C); S. has *ka'txkārR* for leg, *če'ku:rrR* for foot, but the latter expression may signify boot.
hair: *therkous* (C), *te'rrkö:f* (S).
hand: *therrawaus* (C), *te'rrwa* (S).
iron-stone: *iuksthaads* (C); surely a piece of iron pyrites, used for making fire; we obtained *i:kš'tä':t* for matches, undoubtedly the same word and signifying an implement for striking fire.
mouse: *akraceps* (C), *a'trelöp* (S).
nose: *los* (C), *lauxl* (S).
otterskin: *lalthers* (C); S. has *lä'eltl* for otter, *l.-kauš'* for otterskin.
ship's boat: *sherroux* (C), *čä'rru* (S).
skin of seal: *harkusis-hushkei* (C), *ārR-kauš'* (S).
spear for fish: *kip-thatharsh* (C), *tö'ldä:rR* (S).
stomach: *kutshiss* (C), *kaí'tš'el* (S).
thigh: *athursh* (C), *ā'iš'u* (S).
tongue: *lekiss* (C), *lökl* (S).

In some cases the likeness is not very great, but I have tried to trace whatever there is of it. Coppinger's *kesous*, stone axe, may have something to do with *kjetš'lau*, stone (S). His word for eye is *sthole*, for eyebrows however *theseous*, possibly the same as *tčth'liu* (Fitzroy), eye = *teš'l* (S). Two of the children at Tilly bay answered to the names *gounaco* and *gounaco chikachikis; gounaco* is probably a corruption of guanaco, *chikachikis* = *chikichiki*, a corruption of chico (Spanish = small) often used among the natives.

From the comparison made here I conclude, that the natives seen by Dr Coppinger in Tilly bay spoke, at least in part, the same language as the Indians we met with in the Channel region. I cannot tell if the discrepancies depend on mistakes or on the existence of dialects.

To the list on p. 612 in my paper I can add the following words, according to Fitzroy of Alukulup origin, but evidently identical with such as we found in use among the Channel people.

kčr'rlkstă, to fish = *ki'rksta* (S).
ah'lăsh, to fly = *a'ppāš'* (S), *a'lāš'* = run (S).
yïk'stă, flower = *i'ksta:xl* (S).

Finally, I use this occasion to correct the following misprints in my paper:

p. 588, on the map, read "soundings" instead of "scale."
p. 606, black, *palkuarrR*,[2] read *-kwarrR*[1].
p. 606, footnote 2 belongs to the word captain on p. 607.
p. 607, blue, *arxRuarrh*, read *-kwarrR*.
p. 607, to cut, *ajeRahR*, read *ajekarR*.
p. 607, to fall, *kuRxkal*, read *kurxkal*.
p. 608, harpoon nr 4, *irš'Rč'il*, read *irš'kč'il*.
p. 609, footnote 4 corresponds to "rainbow," not to "quiver."
p. 609, skin, *Rauš'*, read *kauš'*.
p. 610, firewood, *ɬa'ɬa:*, read *ɬa'ɬa:s*.
p. 610, three, read *łauklk* in both words.
p. 611, footnote 1 corresponds to *Myrteola*, 2 to *Maytenus*.
p. 612, l.6 from top, *löpiš'*, read *löfiš'*.
p. 612, l.15 from top, *ďcR'ĭnĭsh*, read *ďck'ĭnĭsh*.

CARL SKOTTSBERG

UNIVERSITY OF UPSALA
UPSALA, SWEDEN

THE NEW STOCK NAMES ANNOUNCED FOR CALIFORNIA

The announcement was made in the *American Anthropologist* for 1912, p. 691, of the discovery that certain languages and language groups heretofore considered independent are variously related. Later, a preliminary presentation was made of these new groups for which new family names were proposed.[1]

By means of word lists illustrations were given showing the scope and character of the relationship believed to exist. These examples, however, were by no means sufficient proof of the alleged relationships. It has been generally understood that a more adequate presentation of the matter would soon be made.

Recently, one of the two discoverers of these new groupings made use of the proposed family names, assuming apparently that they had been accepted and were entitled to a place in anthropological literature. This is certainly not the case. The mere announcement of the discoveries has aroused considerable interest and the eminent position in anthropology held by the co-authors warrants the expectation that sufficient evidence for this new grouping exists. Until its presentation and examination, however, judgment must be suspended and the new names ought to be barred from the literature.

P. E. G.

[1] *American Anthropologist*, N. S., vol. 15, pp. 647–655.

ANTHROPOLOGIC MISCELLANEA

The San Francisco Meeting

A Special Meeting of the American Anthropological Association will be held at the University of California, Berkeley, August 2 to 7, 1915, in affiliation with Section H of the American Association for the Advancement of Science. While papers on any anthropological subject will be gladly received, those dealing with all the lands bordering on the Pacific Ocean are especially to be desired.

Three sessions have been set aside for papers and discussions of the following subjects:

1. *Race in the Pacific Area, with Special Reference to the Origin of the American Indians:*
   - Antiquity of Human Occupation
   - Racial Relationships and Descent
   - The Influence of Environment
   - Origin and Changes of Type
2. *The History of Civilization in the Pacific Area, with Special Reference to Relations between Asia and the New World:*
   - Sources and Diffusion of Cultures
   - Effect and Environment
   - Correlations in Time
3. *The Social Aspects of Race Factors in the Pacific Area:*
   - Mixture and its Significance
   - Movements of Population as Causes of Cultural Changes
   - Race Differences and Values

The scope of these subjects is the Pacific *area* as opposed to the Pacific *ocean*. The subject of these sessions is therefore not Polynesia, but the entire circum-pacific tract including Oceania, Indonesia, Eastern Asia, and the western portion of the two American continents.

Titles of papers intended for presentation and abstracts of the same should be sent to the Chairman of the Local Committee on Programme, Professor A. L. Kroeber, Affiliated Colleges, San Francisco.

A ticket covering the trip from Los Angeles to San Diego for the purpose of visiting the Panama-California Exposition may be secured

without extra charge if asked for when purchasing the excursion ticket from an eastern point.

GEORGE GRANT MACCURDY
Sec. Amer. Anthropological Assoc. and Section H, Amer. Assoc. for the Adv. of Science.

THE REVERSAL by the higher court of the conviction of George G. Heye for the removal of skeletons from an old Indian burial ground in New Jersey is a matter of interest to all persons engaged in archeological work.

NEW JERSEY SUPREME COURT.
November, 5, 1914.

THE STATE
vs.
GEORGE G. HEYE,

Error to the Sussex Special Sessions Court.

Argued before Gummere, Chief Justice, and Justices Garrison and Minturn.

For the plaintiff in error, Robert S. Hudspeth.

For the State, William A. Dolan, Prosecutor of the Pleas Per Curiam:

The defendant was tried and convicted under the 148th section of the Crimes Act, which makes it a high misdemeanor for any one to remove a body of any deceased person from his grave or tomb for the purpose of dissection, or for the purpose of selling the same, or from mere wantonness.

The facts show that the plaintiff in error was an anthropologist, who, while looking for Indian relics in Sandyston township, Sussex County, came across a burial place used by the Indians who inhabited that part of the State two or more centuries ago; that he removed two or three of the skeletons which he found there for the collection of the New York Anthropological Society; about the same number for the Museum of the University of Pennsylvania; and several more for the United States Government at Washington. He did this with the consent of the owner of the land upon which these remains were found. On these facts he was convicted.

It may be that in what plaintiff in error did he violated the laws of decency and morality, but it does not seem to us that he brought himself within the purview of the 148th section of the Crimes Act. He certainly did not remove these skeletons for the purpose of dissection; nor was it shown that he did it for the purpose of making sale of them. His conviction was rested upon the theory that his act was one of mere wantonness. We do not think this conclusion sound. He took them for a specific purpose; and a thing done for a specific purpose, whether that purpose be one which the public generally will approve or disapprove, cannot be said to have been done in mere wantonness.

We conclude the judgment under review should be reversed.

THE AMERICAN ETHNOLOGICAL SOCIETY has addressed the following reply to the French universities, which have addressed the scientific bodies of neutral countries, setting forth their view of the causes of the war:

The American Ethnological Society acknowledges the receipt of the communication of the French universities to the universities of the neutral countries, dated November 3, 1914, and takes the opportunity to express its sincere sympathy for the sufferings that the present war is inflicting upon France and other European countries.

The society appreciates and respects the sentiments that have dictated the statement transmitted to it, but believes, regardless of the feelings of the individual members, that it behooves it to listen with the same respect that it gladly grants to you to the statements emanating from other nations. The society, being located in a neutral country, does not share the passions engendered by the patriotic feelings of the citizens of all the contending nations. It is conscious, however, that if the United States of America should find themselves involved in a similar struggle, our members might feel the same intense desire to convince the world of the righteousness of their cause as impels at present French, German, and British scholars.

At present, on account of the remoteness from warlike passions, the society is mindful that the time will come (and we devoutly hope it may come soon) when the universities and scientists of the whole world may work together again for the true ideals of mankind, that know no national boundaries, when respect for the individuality of each nation may again take the place of harsh recrimination, when the true spirit of coöperation that has characterized scientific work of the past century may reappear. When that moment arrives, the passionate expressions of an excited time will not and must not stand in the way of mutual understanding and of a renewal of old friendships.—*Science.*

F. C. COLE, Assistant Curator of Physical Anthropology and Malayan Ethnology in the Field Museum, Chicago, was granted the degree of Doctor of Philosophy on November 8, 1914, in the Faculty of Philosophy of Columbia University. He presented as his thesis "A Study of Tinguian Folk-Lore," reprinted from his publication "Traditions of the Tinguian, a Study in Philippine Folk-lore," which has just been issued by the Field Museum as No. 1 of Volume 14 of its Anthropological Series.

Doctor Cole lectured on March 13 and 20 at the University of Pennsylvania, Philadelphia, on "The Wild Tribes of the Philippines" and on "The Philippines before and after American Occupation." He was likewise engaged for a lecture at the New Jersey State Normal School at Trenton, N. J., on March 17.

Dr A. B. Lewis, Assistant Curator of Melanesian Ethnology in the Field Museum, Chicago, delivered a lecture on "Native Life and Industries in New Guinea," at the University Museum, Philadelphia, on February 27 of this year.

ANTHROPOLOGICAL field-work of the American Museum of Natural History will center chiefly in the Southwest. Mr N. C. Nelson continues his thorough and detailed exploration of the Galisteo pueblo district which is yielding the first definite stratigraphic data on the archeology of the Southwest. Arrangements for coöperation with the University of Colorado have been made by which similar systematic work will be carried on in Southern Colorado. Ethnological work in the Southwest will be restricted to the problems of relationship and social organization: Professor A. L. Kroeber will work at Zuñi and Dr R. H. Lowie among the Hopi. Later in the summer Dr Lowie will continue his study of the Shoshonean tribes of Nevada. Rev. Gilbert L. Wilson will further elaborate his exhaustive studies of Mandan-Hidatsa material culture. In the vicinity of New York City Mr Alanson Skinner will proceed with the special archeological survey of Long Island and the study of certain rock-shelters in New Jersey and Pennsylvania. Mr Leslie Spier will continue the archeological work in Central New Jersey begun last year.

THE museum of the California Academy of Sciences has recently acquired the entire Lowe collection of Indian baskets, pottery, stone implements, Navajo and Chilkat blankets, and miscellaneous objects of Indian manufacture and use. This collection comprises more than 1,500 Indian baskets, and several hundred pieces of pottery and miscellaneous objects. The collection of baskets, which is said to be one of the most complete and valuable in existence relating to the Pacific coast tribes, is the result of many years devoted to the subject by the late Professor and Mrs T. S. C. Lowe, of Pasadena. The collection comes to the academy as an indefinite loan through the generosity of Hon Wm. M. Fitzhugh, of San Francisco. Mr Fitzhugh not only gives the collection, but will also meet all the expenses of labeling, card cataloguing, providing cases of the best type and installing the collection in the academy's new museum building now under construction in Golden Gate Park.—*Science.*

THE following course of lectures was given at the University Museum, Philadelphia:

February 20. Dr Edith H. Hall, of the University Museum, Paintings from Aegean Palaces.

February 27. Dr A. B. Lewis, of the Field Museum of Natural History, In the Savage South Seas.

March 6. Frederick Monsen, F.R.G.S., On the Trail of the Spanish Pioneers.

March 13. Dr Fay Cooper Cole, of the Field Museum of Natural History, The Wild Tribes of the Philippines.

March 20. Dr Fay Cooper Cole, of the Field Museum of Natural History, The Philippines Before and After the American Occupation.

March 27. Prof. Howard Crosby Butler, of Princeton University, Byzantine Art.

UNDER the leadership of Dr Hiram Bingham, the National Geographic Society-Yale University Peruvian Expedition sailed from New York on March 3 to continue its work in the Andean Mountains. Members who left New York on this expedition are: Director, Hiram Bingham, Yale University; geologist, Herbert E. Gregory, Ph.D., Silliman professor of geology in Yale University, geologist of the 1912 expedition; naturalist, Edmund Heller, naturalist of the Smithsonian's African expedition, under the leadership of Colonel Roosevelt; botanist, O. F. Cook, Ph.D., of the United States Department of Agriculture; chief engineer, Ellwood C. Erdis, of the 1912 expedition; topographer, Edwin L. Anderson; chief assistant and interpreter, Osgood Hardy, M.A., of the 1912 expedition; assistant topographer, C. F. Westerberg, B.S., and several assistants.—*Science*.

ON FEBRUARY 2 a memorial address was delivered by Dr C. L. G. Anderson before the Anthropological Society of Washington on Dr A. F. A. King, for many years an active member of the Society. Mr J. N. B. Hewitt also read a paper on "The Tree of Life in Tradition." The meeting of February 16 was opened by a short statement by those who had recently returned from field-work of the nature and some of the results of their investigations. It was followed by a paper by Mr William H. Babcock on "The Races of Britain." On March 2 Mr E. T. Williams, Chief of the Division of Far Eastern Affairs of the Department of State, gave an illustrated lecture on "Confucianism; the State Religion of China."

DR W. H. R. RIVERS of Cambridge, England, who had attended the Australian meeting of the British Association for the Advancement of Science and subsequently supplemented some of his earlier field-work in the South Seas, made his return trip by way of the United States, sailing from New York on April 10th. Brief stays at San Francisco,

Washington, and New York gave his American colleagues a long-desired opportunity to exchange views with this distinguished anthropologist, whose recently published *Kinship and Social Organisation* and *The History of Melanesian Society* are bound to stimulate discussion and research for years to come.

PROFESSOR FELIX VON LUSCHAN, who sailed from New York on April 29, was likewise a guest of the British Association at the Australian meeting. He returned by way of Hawaii and the United States, where he visited the principal museums and attended the annual session of the American Anthropological Association at Philadelphia. Fortunately, he was able to devote several weeks prior to his departure to an anthropometric investigation of Southern Negroes and the relevant problems of miscegenation. Professor von Luschan and Dr Rivers both attended a reunion of resident anthropological workers at Professor Boas's house.

AN INSTITUTION for ethnological research has been founded in Leipzig. The new institution forms part of the King Friedrich August Foundation for Scientific Research. It is affiliated with the Ethnographic Museum of Leipzig, and is furthermore in close connection with the Ethnological Seminar at the university. Dr Karl Weule, director of the museum, is also director of the research institution. It may be expected that excellent results will be obtained by this concentration of effort, which contrasts favorably with the dispersion of energy as found in cities like Vienna and St Petersburg and in most cities of the United States. —*Science.*

ACCORDING to the *Revue Anthropologique* two noted French prehistorians, Joseph Déchelette and Captain M. Bourlon, have died at the front. Déchelette will long be remembered for his great work entitled *Manuel d'archéologie préhistorique, celtique et gallo-romaine,* of which the first volume appeared in 1908 and the third part of the second and last volume in 1914, only a short while before the outbreak of the war. Captain Bourlon, an enthusiastic and gifted explorer of the paleolithic French caves, had written a number of valuable papers based on his field-work.

The last number of *L'Anthropologie* adds to these Capt. René Avelot, known for his contributions to geography and especially those dealing with the ancient population of central and eastern Africa; and Capt. Maurice Cortier, eminent topographer, and active in the archeology of Sahara.

PREPARATIONS have been successfully concluded by the University Museum of Philadelphia for sending an expedition to the interior of China for the purpose of studying Chinese culture in the earliest stages of its development and collecting data relative to the more primitive aboriginal cultures, some of which have survived the contact with Chinese civilization. Mr C. W. Bishop, assistant curator of the Ethnological Section of the Museum, has been chosen for this work. Mr Bishop left Philadelphia about the middle of January to begin his work in the Far East.

DR J. W. FEWKES has returned to Washington from a month's exploration of the prehistoric village sites of the Mimbres valley, N. M. He secured by purchase a collection of prehistoric objects from that valley consisting of painted pottery, stone implements, and artifacts of shell, bone, and other material, numbering about eight hundred specimens. The painted pottery is particularly important on account of the unique geometrical designs and the abundance of figures of men and animals which recall those from the Casas Grandes, in Chihuahua.

NEWS has been received from the University of Pennsylvania's Amazon expedition through its director, Dr W. C. Farrabee. It is the first news that has come through in four months. Dr Farrabee reports that he has spent three months at work in the interior, where he has been successful in getting much information and many specimens. He further states that he has just started for the highlands on the borders of Bolivia, Peru and Brazil, from which he had to turn back last August. —*Science.*

JANUARY 12 Dr J. W. Fewkes was present as a special delegate representing the Smithsonian Institution at the inauguration of Dr Von Kleinsmid, the new President of the University of Arizona. On this occasion Dr Fewkes had conferred upon him the degree of LL.D. by the University.

MRS MATILDA COXE STEVENSON, for many years an ethnologist in the Bureau of American Ethnology at Washington, has tendered her resignation to take effect June 30, 1915. Mrs Stevenson has been engaged in recent years in studying the ethnology of the Tewa Indians of New Mexico, a memoir on which is practically ready for publication.

A HOPI INDIAN GROUP was formally opened at the American Museum of Natural History in New York, April 8, 1915. The village of Walpi

and its surroundings are shown in a background painted by Howard McCormick. In the foreground are modeled figures by Mahonri M. Young representing the industrial life of the Hopi.

THE 75th anniversary of the foremost Italian anthropologist, Prof. Giuseppe Sergi, will be celebrated by his colleagues during this year, and a commemorative volume of anthropological contributions by his many friends will be published on the occasion.

MINOR C. KEITH has deposited in the American Museum of Natural History as a loan a large selected portion of his collection of stone and pottery objects from Costa Rica as well as the unrivaled collection of gold from the same region.

THE HARVARD TRAVELLERS CLUB is publishing a book which will follow along the same lines as the Royal Geographical Society's "Hints to Travellers." Professors R. B. Dixon and A. M. Tozzer are writing the section on "Anthropology."

SINCE Easter Professor George Grant MacCurdy of Yale University has lectured on "The Dawn of Art" for the Archeological Institute of America at Richmond, Va., Washington, D. C., and Rochester, Auburn, Syracuse, and New York, N. Y.

THE APRIL number of the *Revue Anthropologique* brings a curious exposure relating to archeological activities by certain foreigners in the Eyzies, one of the richest regions in remains of man's antiquity in France.

PROFESSOR ARTHUR KEITH, Royal College of Surgeons, London, is in this country to deliver a course of five lectures on anthropology at the Western Reserve University, Cleveland, Ohio.

MR JOHN P. HARRINGTON, who has been engaged particularly in ethnological researches among the Mohave and Chumashan Indians, has been appointed ethnologist in the Bureau of American Ethnology.

PROFESSOR BYRON CUMMINGS has resigned from the University of Utah and accepted an appointment as Professor of Archeology in the University of Arizona at Tucson.

DR WALTER HOUGH, curator of ethnology, U. S. National Museum, gave an address before the California Academy of Sciences on February 17, on "Explorations of a Sacred Cave in Arizona."—*Science.*

DR A. V. KIDDER of the Peabody Museum is to excavate the Pueblo of Pecos for the Department of Anthropology at Andover. He will be assisted by S. J. Lothrop, a graduate student of Anthropology at Harvard.

THE ANNUAL PEABODY MUSEUM EXPEDITION to Central America is in charge of Dr R. E. Merwin assisted by Arthur Carpenter, Central American Fellow. The expedition is now in northern British Honduras.

DR RUDOLPH R. SCHULLER, of the Museu Goeldi, Para, Brazil, delivered an illustrated lecture on "Present Knowledge of the South American Indians" at the University of Chicago on February 11th.

S. G. MORLEY, Research Fellow of the Carnegie Institution, is now exploring in Guatemala.

IN the Division of Anthropology at Harvard University, Dr Earnest A. Hooton will offer a new course on Criminal Anthropology.

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1915

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